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619-E-11

U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

1959

Water Resources Data
Hawaii and other Pacific Areas
Water Year 1984

Volume 1. Hawaii

ORIGINAL

310

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-84-1
Prepared in cooperation with the State of Hawaii Department
of Land and Natural Resources, Division of Water and
Land Development and with other agencies

CALENDAR FOR WATER YEAR 1984

1983

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U.S. DEPARTMENT OF THE INTERIOR
March 3 1849

1959

Water Resources Data
Hawaii and other Pacific Areas
Water Year 1984

Volume 1. Hawaii

by Salwyn S. Chinn, Grace A. Tateishi, and Johnson J.S. Yee

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-84-1

Prepared in cooperation with the State of Hawaii Department
of Land and Natural Resources, Division of Water and
Land Development and with other agencies

I

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Hawaii
and other Pacific Areas write to
District Chief, Water Resources Division
U.S. Geological Survey
300 Ala Moana Boulevard, Rm. 6110
P.O. Box 50166
Honolulu, Hawaii 96850

1985

PREFACE

This volume of the annual hydrologic data report of Hawaii and other Pacific Areas is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Hawaii and other Pacific Areas are contained in two volumes:

Volume 1. Hawaii
Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

Reuben Lee
George Gobara
Eugene S. Capellas
Rose M. Maruoka
Lodie T. Piniol
Richard H. Nakahara
Noriaki Kojiri
Isao Yamashiro
Akiko K. Tanaka
Leonora L. K. Onaga

This report was prepared in cooperation with the State of Hawaii, the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies under the general supervision of Stanley F. Kapustka, District Chief, Hawaii.

50272-101

REPORT DOCUMENTATION PAGE

1. REPORT NO. USGS/WRD/HD-85/247

2.

3. Recipient's Accession No.

4. Title and Subtitle
Water Resources Data for Hawaii and other Pacific Areas, Water Year 1984. Volume 1, Hawaii

5. Report Date
July 1985

6.

7. Author(s)
Salwyn S. Chinn, Grace A. Tateishi, and Johnson J. S. Yee

8. Performing Organization Rept. No.
USGS-WDR-HI-84-01

9. Performing Organization Name and Address
U.S. Geological Survey, Water Resources Division
300 Ala Moana Blvd, Room 6110
Honolulu, Hawaii 96850

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S.Geological Survey, Water Resources Division
300 Ala Moana Blvd. Room 6110
Honolulu, Hawaii 96850

13. Type of Report & Period Covered
Annual - Oct. 1, 1983 to Sept. 30, 1984

14.

15. Supplementary Notes

Prepared in cooperation with the State of Hawaii and with other agencies.

16. Abstract (Limit: 200 words)

Water resources data for the 1984 water year for Hawaii and other Pacific Areas consist of records of stage, discharge, and water quality of streams and springs; and water levels and water quality in wells. This report, volume 1, contains discharge records for 96 gaging stations; water quality for 13 gaging stations, 102 partial-record flow stations, and 153 wells; and water levels for 39 observation wells. Also included are 108 crest-stage partial-record stations and 21 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Federal, and other agencies in Hawaii.

17. Document Analysis a. Descriptors

*Hawaii, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement No restriction on distribution
This report may be purchased from:
National Technical Information Service
Springfield, VA 22161

19. Security Class (This Report)
UNCLASSIFIED

20. Security Class (This Page)
UNCLASSIFIED

21. No. of Pages
297

22. Price

(See ANSI-Z39.18) See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

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SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

Letters after station name designate type of data:
(d) discharge, (c) chemical, (m) microbiological,
(t) water temperature, (s) sediment

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(c) chemical, (t) water temperature, (w) water level

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(6-5130-02)	205154156303801	(w)	240
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(6-5330-11)	205330156305401	(ct)	275
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(8-1129-01)	191114155294801	(ct)	257
(8-1229-01)	191219155291601	(ct)	257
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(8-2783-01)	192728154530101	(ctw)	244
(8-2986-01)	192924154564701	(ct)	278
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(8-3188-01)	193105154580301	(ct)	257
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(8-4203-05)	194222155035001	(ct)	257
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(8-4858-03)	194820155582401	(ct)	258
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(8-5946-01)	195929155462501	(ct)	258
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WATER RESOURCES DATA FOR HAWAII AND OTHER PACIFIC AREAS, 1984

Volume 1

INTRODUCTION

Water resources data for the 1984 water year for Hawaii and other Pacific areas consist of records of stage, discharge, and water quality of streams, ditches, and springs; and water-levels and water quality of wells. This report, Volume 1, contains discharge records for 96 gaging stations; water quality for 13 gaging stations, 102 partial-record flow stations, and 153 wells; and water levels for 39 observation wells. Also included are 108 crest-stage partial-record stations and 21 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Federal, and other agencies in Hawaii.

Through September 30, 1960 (June 30, 1960, for Hawaii and other Pacific areas), the records of discharge (or stage) of streams, and contents (or stage) of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." The records in Hawaii were contained in the series as "Surface Water Supply of Hawaii." Records for other Pacific areas were contained in one volume entitled, "Surface Water Supply of Mariana, Caroline, and Samoa Islands." Through water year 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

Beginning with the 1961 water year (fiscal year for Hawaii) and continuing through water year 1974, streamflow data have been released by the Geological Survey in annual reports on a state-boundary bases. Water-quality records beginning with the 1964 water year, and ground-water data since the 1971 water year have been similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a state-boundary basis. These official Survey reports carry an identification number consisting of the two-letter state abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report HI-83-1." For archiving and general distribution, the reports for water years 1971-74 are also indentified as water-data reports. These water-data reports are for sale, in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information including current prices, for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephone (808) 546-8331.

COOPERATION

The U.S. Geological Survey and organizations of the State of Hawaii have had cooperative agreements for the systematic collection of streamflow records since 1909, and for water-quality records since 1967. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Hawaii Department of Land and Natural Resources, Division of Water and Land Development, Manabu Tagomori, Manager-Chief Engineer.
Hawaii Department of Health, Leslie S. Matsubara, Director.
City and County of Honolulu, Board of Water Supply, Kazu Hayashida, Manager and Chief Engineer.
City and County of Honolulu, Department of Public Works, Russell L. Smith, Jr., Director and Chief Engineer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army and the Public Works, U.S. Navy.

The following organizations aided in collecting records:

Maui County Board of Water Supply; East Kauai Water Co., Ltd.; McBryde Sugar Co., Ltd.; East Maui Irrigation Co., Ltd.; and B. P. Bishop Estate.

SUMMARY OF HYDROLOGIC CONDITIONS

Runoff during the 1984 water year was below normal at the index stations on the islands of Kauai, Oahu, Maui, and Hawaii. The annual mean runoff in relation to the median of yearly mean discharge for the period 1951-80 for the index stations ranged between 34 and 70 percent. Monthly mean flow was in the deficient range (lower 25 percent of record) at all the index stations during the months December, March, and July through September.

At East Branch of North Fork Wailua River near Lihue, Kauai, streamflow was deficient for every month except October, April, and June. Its annual mean discharge was 45 percent of the 1951-80 annual median. Streamflow at Kalihi Stream near Honolulu, Oahu, was deficient for December, and March through September. The yearly mean was 34 percent of the 1951-80 annual median. Monthly mean discharge at the index station Honopou Stream near Huelo, Maui, was excessive for the month of October and deficient for the months of December, March, and July through September. Annual mean was 70 percent of the 1951-80 annual median. Monthly mean flow at Waiakea Stream near Mountain View, Hawaii, was deficient for the months November through January, March, and May through September. The annual mean was 51 percent of the 1951-80 annual median.

Monthly and yearly mean discharges of the four index stations are compared with their medians in figure 1.

The chemical quality of surface waters statewide showed little change from previous years. Specific conductance values increased slightly from the 1983 water year. The average values determined at 87 gaging stations ranged from 15 to 841 umho/cm (micromhos per centimeter). By comparison, the range for the previous year was 18 to 678 umho/cm. The average specific conductance values of streams listed by island are:

Island	Number of Streams	Average Specific Conductance (mho/cm)		
		Minimum	Maximum	Median
Kauai	23	32	167	94
Oahu	28	50	841	131
Molokai	6	55	150	104
Maui	19	15	85	51
Hawaii	11	24	53	26

Dissolved-solids concentrations at the six NASQAN (National Stream Quality Accounting Network) stations also showed little change during the 1984 water year from the previous year. Samcollected every other month showed dissolved-solids concentrations ranged from 37 to 292 mg/L (milligrams per liter) during 1984 compared to 35 to 306 for 1983. Waikele Stream at Waipahu, Oahu, had the highest concentration values.

Average dissolved-oxygen concentrations ranged from 68 to 107 percent saturation. Waikele and Kalihi streams were the lowest at 68 and 84 percent, respectively.

Concentrations of trace metals were less than the minimum contaminant levels established by EPA (Environmental Protection Agency). Fecal coliform densities decreased on Oahu streams, but the densities were high compared to other NASQAN and Benchmark stations in Hawaii. Kalihi Stream at Kalihi, Oahu had the highest fecal coliform density. The geometric-mean values were:

NASQAN Station	Fecal Coliform (colonies per 100 milliliters) 1983	1984
Waimea River at Waimea, Kauai	225	446
Waikele Stream at Waipahu, Oahu	5650	5547
Kalihi Stream at Kalihi, Oahu	8340	5710
Halawa Stream near Halawa, Molokai	81	127
Kahakuloa Stream at Kahakuloa, Maui	20	37
Wailuku River at Hilo, Hawaii	52	77
Benchmark Station		
Honolii Stream near Papaikou, Hawaii	24	100

Ground-water levels at two index well sites on Oahu showed that the water level was slightly below the normal range and it dropped steadily from January to September 1984. The water level on the other islands also showed similar conditions as that of Oahu.

Analyses of water samples taken at more than 150 basal water-table wells generally did not show significant changes in chloride concentration.

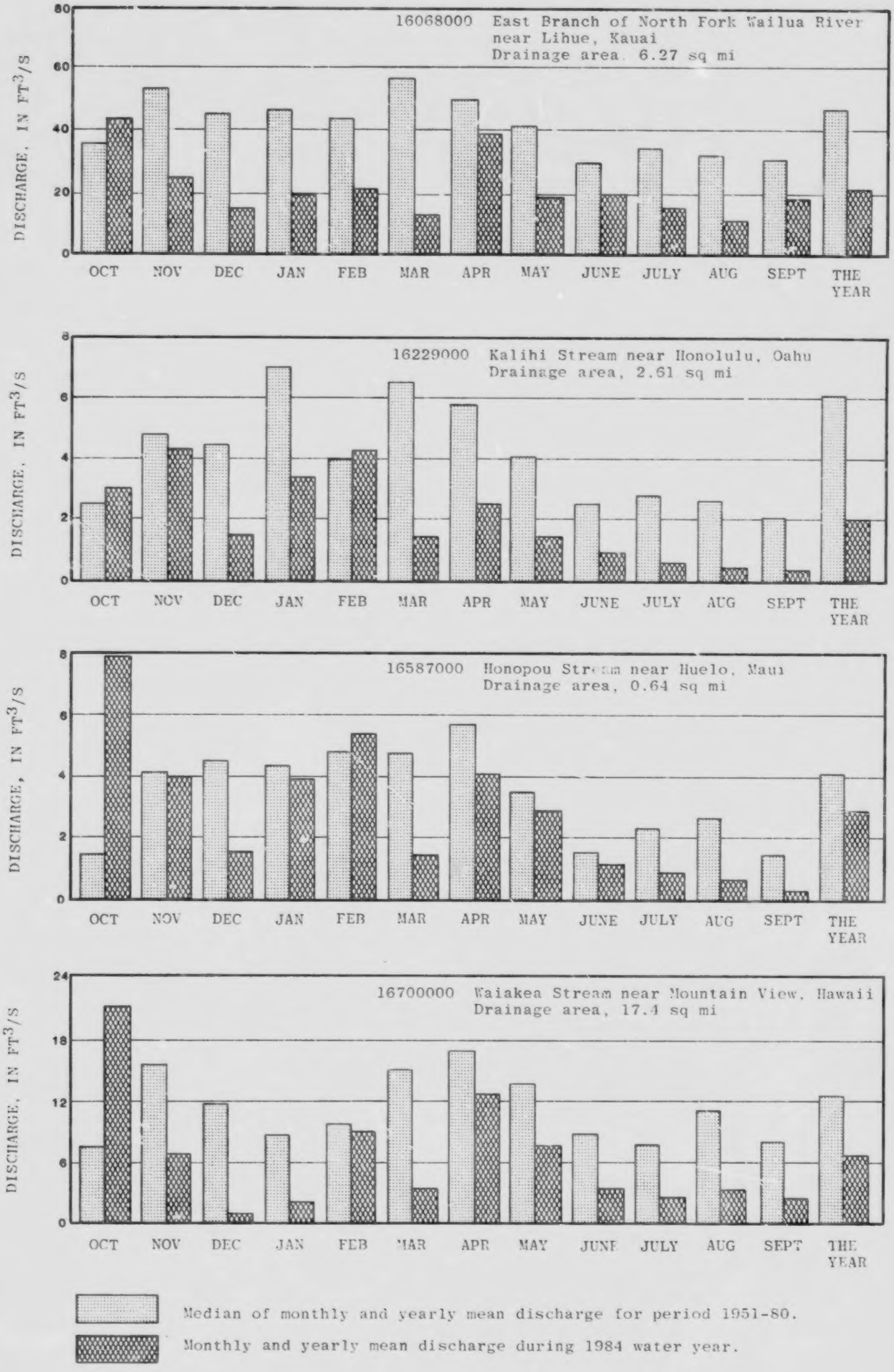

FIGURE 1. DISCHARGE DURING 1984 WATER YEAR COMPARED WITH MEDIAN DISCHARGE FOR PERIOD 1951-80 FOR FOUR REPRESENTATIVE GAGING STATIONS.

DEFINITION OF TERMS

Definition of terms related to streamflow, water-quality, and other hydrologic data are defined as follows:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies withing 24 hours when incubated at 35°C ± 0.5°C on M-Endoagar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliter of of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacterial which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 0.5°C on KF Streptococcus agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any time, expressed as the weight per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in g/m^3 (grams per cubic meter), and periphyton and benthic organisms in g/m^2 (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash, and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters of liters (L).

CFS-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, or 646,317 gallons or 2,447 cubic meters.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuing record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.

2. When water temperature records include observations taken one or more times daily.

3. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic average of individual daily mean discharges during a specified period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the table is "DISCHARGE (CFS)."

Dissolved is that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Microgram per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Microgram per liter (µG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligram per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.0	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Pesticides are chemical compounds used to control the growth of undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (Pc,pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radio-active disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total-sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weight concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Suspended recoverable is the amount of a given constituent that is insolution after the part of a respresentative water-suspended sediment sample that is retained on a 0.45 micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparibility of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituents.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed Nephelometric turbidity units (NTU).

WDR is used as an abbreviation for "Water-Data Reports" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all main-stream stations are listed before the first main-stream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations and water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 16200000 which appears just to the left of the station name includes the 2-digit number "16" plus the 6-digit downstream order number "200000." In this report, the records are listed in downstream order by islands. Locations of the stations are shown in figures 2, 4, 6, 8, and 10.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

Miscellaneous downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits is a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and a miscellaneous site are the same, assign sequential numbers "01," "02," etc. as one would for wells. See figure 12.

Beginning in 1971, the local well-numbering system for Hawaii was restructured to contain seven digits based on a non-arbitrary, unique one-minute grid system. One-minute parallel lines for both latitude and longitude are drawn on the map resulting in one-minute grids. Each grid is designated by a four-digit number. The first two digits represent minutes of latitude for the grid and the second two digits represent minutes of longitude for that grid. This establishes unique minute-grid numbers within each of the islands in the state except for the island of Hawaii where it encompasses an area more than one degree (60 minutes) of latitude and longitude. To establish unique minute-grid numbers for this island, 30 was added to the minutes of latitude in areas less than 19°00" of latitude, and 60 was added to the minutes of latitude in areas more than 20°00" of latitude. For the same reason, 30 was added to the minutes of longitude in areas less than 155°00" of longitude, and 60 was added to the minutes of longitudes more than 156°00" longitude. See figures 13 and 14.

To distinguish wells within a minute grid, two grids are added following the 4-digit minute-grid numbers with a dash separator. These two-digit numbers are assigned with the oldest well dug within the grid as 01 and increase chronologically, with few exceptions, to the latest dug.

Since it is possible to have a same 6-digit number for wells on different islands, another digit distinguishing each of the islands, is added in front of the 6-digit number with a dash separator.

Well locations on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii are shown in figures 3, 5, 7, 9, and 11,

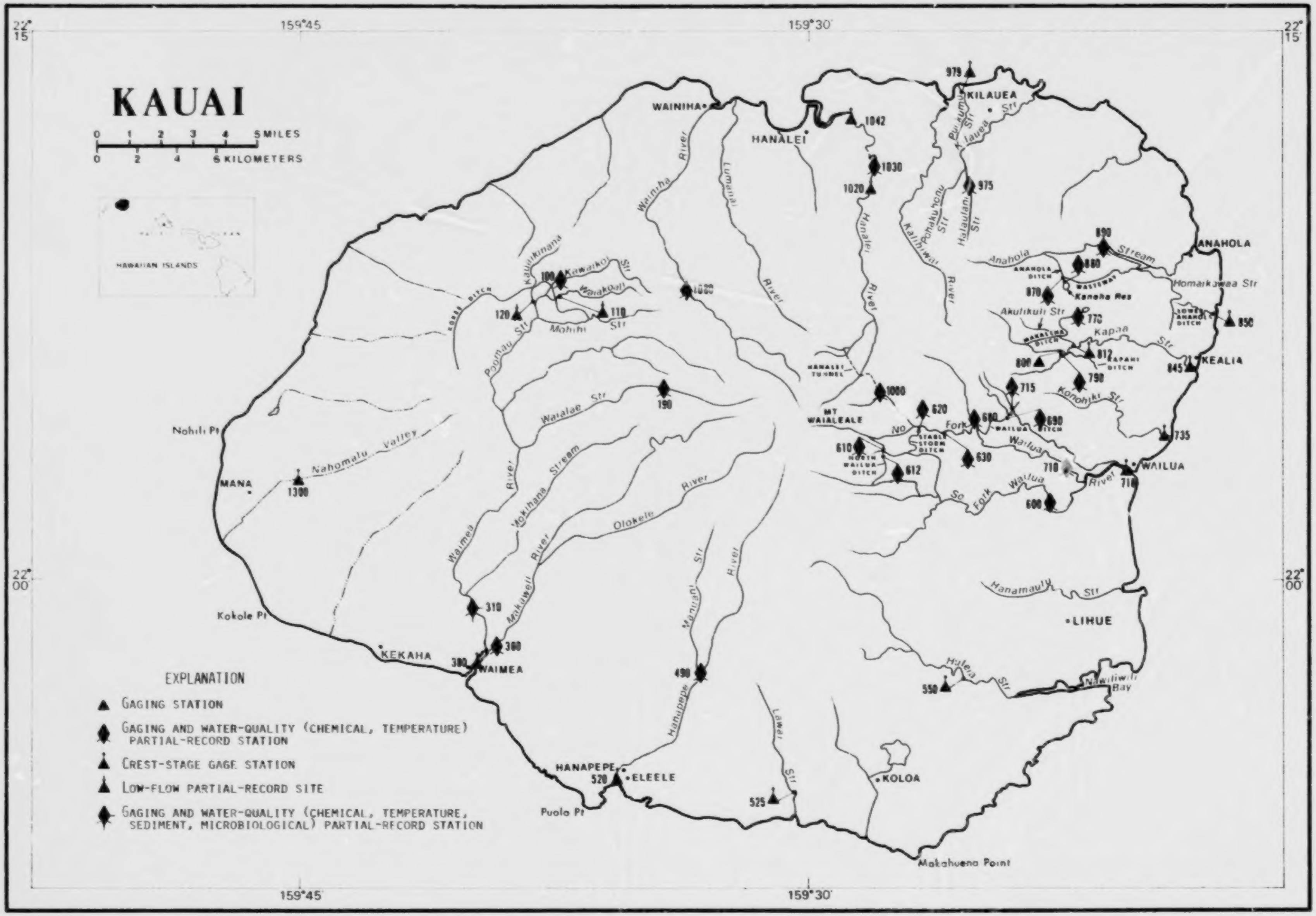
KAUAI
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
HAWAIIAN ISLANDS
22° 15'
159°45'
159°30'
22° 00'
EXPLANATION
▲ Gaging station
♦ Gaging and water-quality (chemical, temperature) partial-record station
▲ Crest-stage gage station
▲ Low-flow partial-record site
♦ Gaging and water-quality (chemical, temperature, sediment, microbiological) partial-record station
WAINIHA
HANALEI
KILAUEA
ANAHOLA
KEALIA
WAILUA
LIHUE
KOLOA
HANAPEPE
ELEELE
WAIMEA
KEKAHA
MANA
Nohili Pt
Kokole Pt
Puolo Pt
Makahuena Point
Nawiliwili Bay
MT WAIALEALE
Nahomalu Valley
Waimea River
Makaweli River
Mokihana Stream
Olokele River
Waialae Str
Poomau Str
Mohihi Str
Kauaikinana
Kawaikoi Str
Waiakoali
Kokee Ditch
Wainiha River
Lumahai River
Hanalei River
Kalihiwai River
Pohakuhonu Str
Halaulani Str
Puukumu Str
Kilauea Str
Anahola Stream
Anahola Ditch
Wasteway
Kaneha Res
Homaikawaa Str
Lower Anahola Ditch
Akulikuli Str
Makaleha Ditch
Kapaa Str
Kapahi Ditch
Konohiki Str
Hanalei Tunnel
No Fork Wailua
Stable Storm Ditch
North Wailua Ditch
Wailua Ditch
Wailua River
So Fork Wailua
Hanamaulu Str
Huleia Str
Manuahi Str
Hanapepe River
Lawai Str
979
1042
1030
1020
975
890
880
870
770
850
812
800
790
715
845
1000
620
680
690
735
610
612
630
710
716
600
1080
100
120
110
190
1300
310
360
380
490
550
520
525

Figure 2.--Locations of gaging, water-quality, and partial-record stations on Kauai.

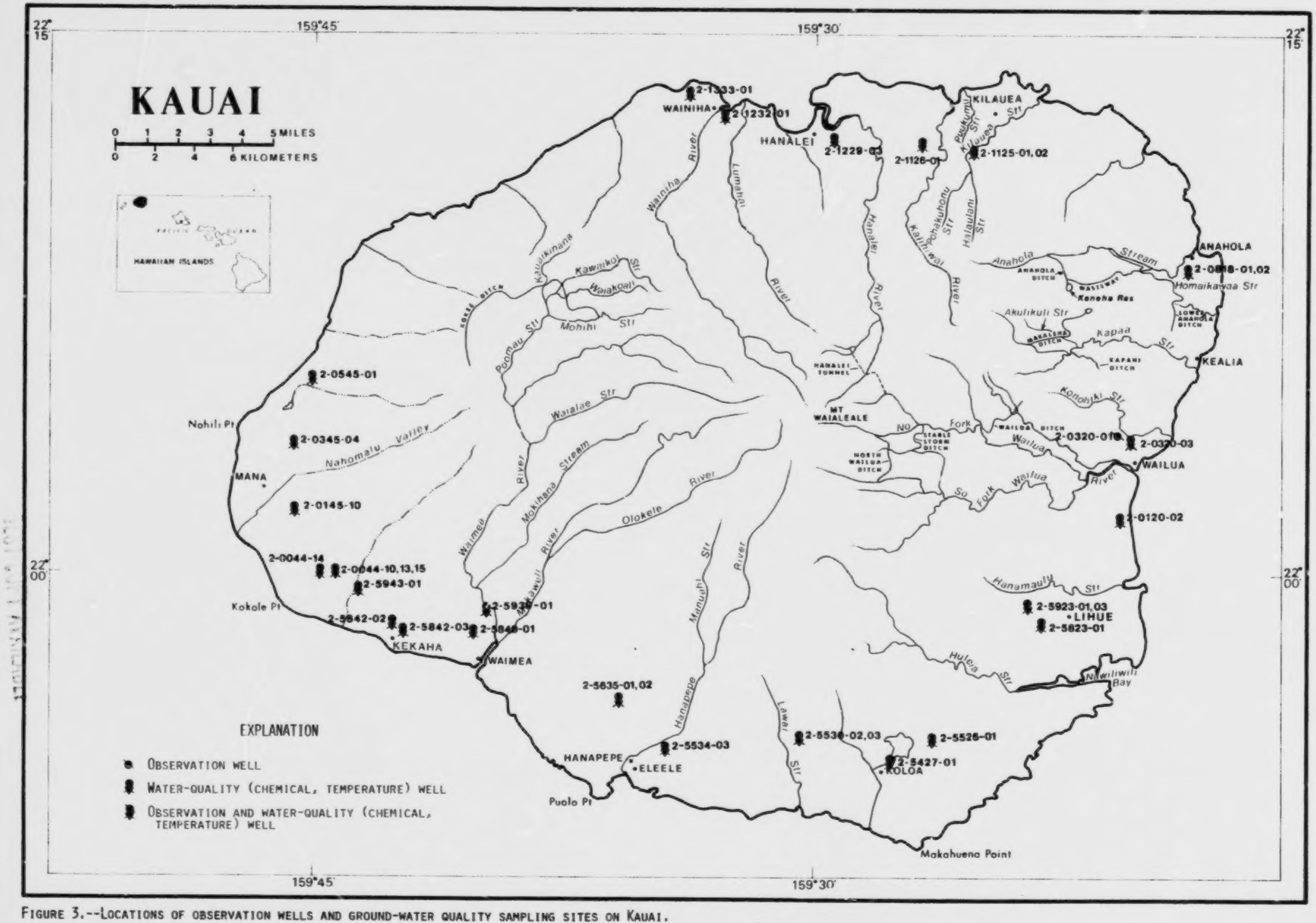
KAUAI
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
HAWAIIAN ISLANDS
PACIFIC OCEAN
22° 15'
159°45'
159°30'
22° 00'
2-1333-01
WAINIHA
2-1232-01
HANALEI
2-1229-03
2-1126-01
KILAUEA
2-1125-01,02
ANAHOLA
2-0818-01,02
Homaikawaa Str
KEALIA
2-0320-01
2-0320-03
WAILUA
2-0120-02
2-5923-01,03
LIHUE
2-5823-01
Nawiliwili Bay
2-5526-01
2-5427-01
KOLOA
2-5530-02,03
2-5534-03
HANAPEPE
ELEELE
Puolo Pt
Makahuena Point
2-5635-01,02
WAIMEA
KEKAHA
2-5842-02
2-5842-03
2-5840-01
2-5930-01
2-5943-01
2-0044-14
2-0044-10,13,15
Kokole Pt
2-0145-10
MANA
2-0345-04
Nohili Pt
2-0545-01
Nahomalu Valley
MT WAIALEALE
HANALEI TUNNEL
NORTH WAILUA DITCH
STABLE STORM DITCH
WAILUA DITCH
KAPAHI DITCH
WAKALEHA DITCH
LOWER ANAHOLA DITCH
ANAHOLA DITCH
WASTEWAY
Keneha Res
KOKEE DITCH
Wainiha River
Lumahai River
Hanalei River
Kalihiwai River
Pohakuhonu Str
Halaulani Str
Puukumu Str
Kilauea Str
Anahola Stream
Akulikuli Str
Kapaa Str
Konohiki Str
No Fork Wailua
So Fork Wailua
Wailua River
Hanamaulu Str
Huleia Str
Lawai Str
Hanapepe River
Manuahi Str
Olokele River
Makaweli River
Mokihana Stream
Waimea River
Waialae Str
Poomau Str
Mohihi Str
Waiakoali
Kawaikoi Str
Kauaikinana
EXPLANATION
Observation well
Water-quality (chemical, temperature) well
Observation and water-quality (chemical, temperature) well

Figure 3.--Locations of observation wells and ground-water quality sampling sites on Kauai.

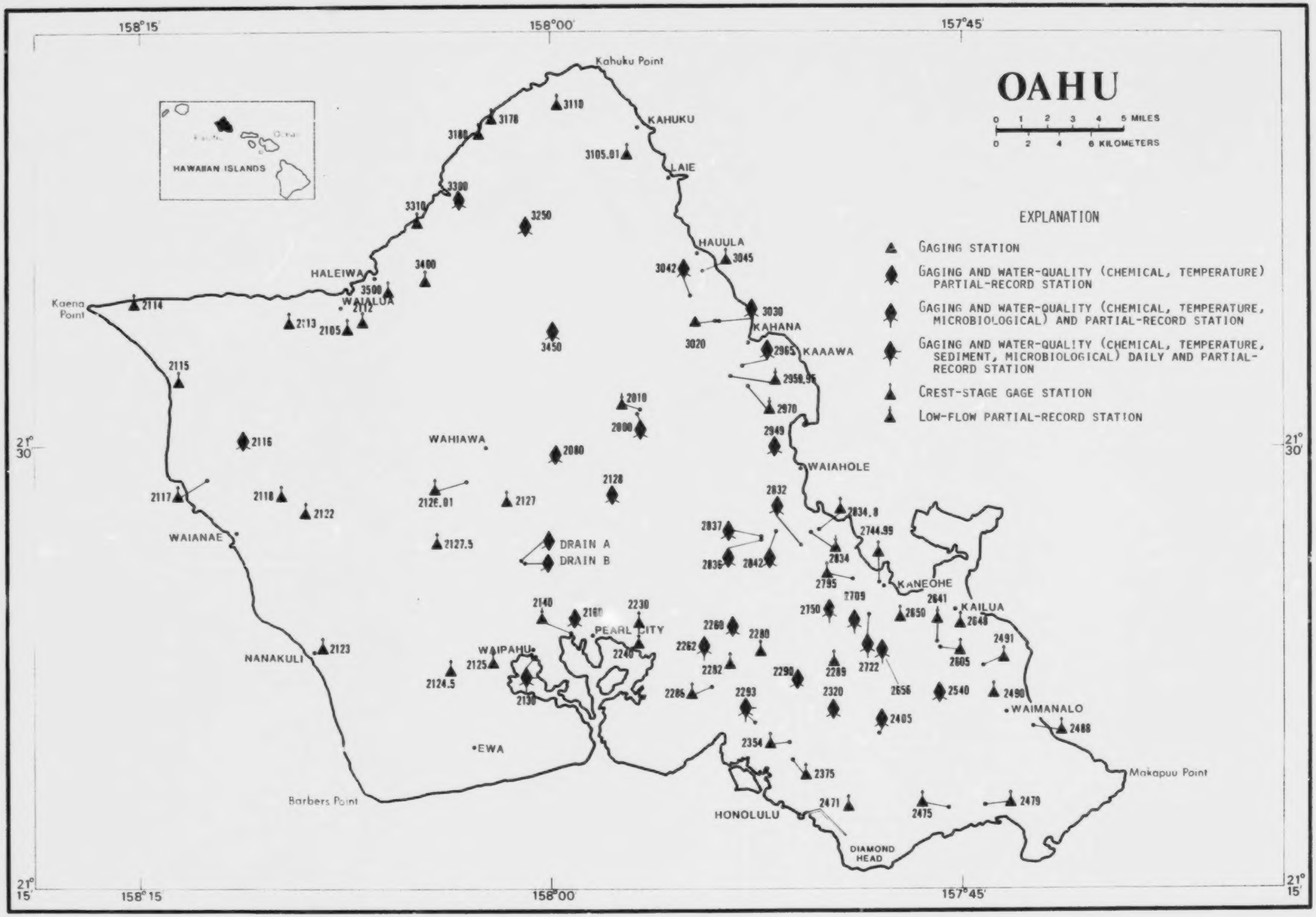
OAHU
158°15'
158°00'
157°45'
21° 30'
21° 15'
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
HAWAIIAN ISLANDS
Kahuku Point
KAHUKU
LAIE
HAUULA
KAHANA
KAAAWA
WAIAHOLE
KANEOHE
KAILUA
WAIMANALO
Makapuu Point
DIAMOND HEAD
HONOLULU
Barbers Point
EWA
WAIPAHU
PEARL CITY
WAHIAWA
HALEIWA
WAIALUA
Kaena Point
WAIANAE
NANAKULI
DRAIN A
DRAIN B
3110
3178
3180
3105.01
3300
3310
3250
3400
3500
2112
2105
2113
2114
2115
2116
2117
2118
2122
2123
2124.5
2125
2126.01
2127
2127.5
2128
2130
2140
2160
2230
2240
2260
2262
2280
2282
2286
2290
2293
2320
2354
2375
2405
2471
2475
2479
2488
2490
2491
2540
2605
2641
2648
2650
2656
2709
2722
2750
2795
2834
2834.8
2744.99
2832
2837
2836
2842
2949
2970
2958.95
2965
3020
3030
3042
3045
3450
2010
2000
2080
2289
EXPLANATION
Gaging station
Gaging and water-quality (chemical, temperature) partial-record station
Gaging and water-quality (chemical, temperature, microbiological) and partial-record station
Gaging and water-quality (chemical, temperature, sediment, microbiological) daily and partial-record station
Crest-stage gage station
Low-flow partial-record station

Figure 4.--Locations of gaging, water-quality, and partial-record stations on Oahu.

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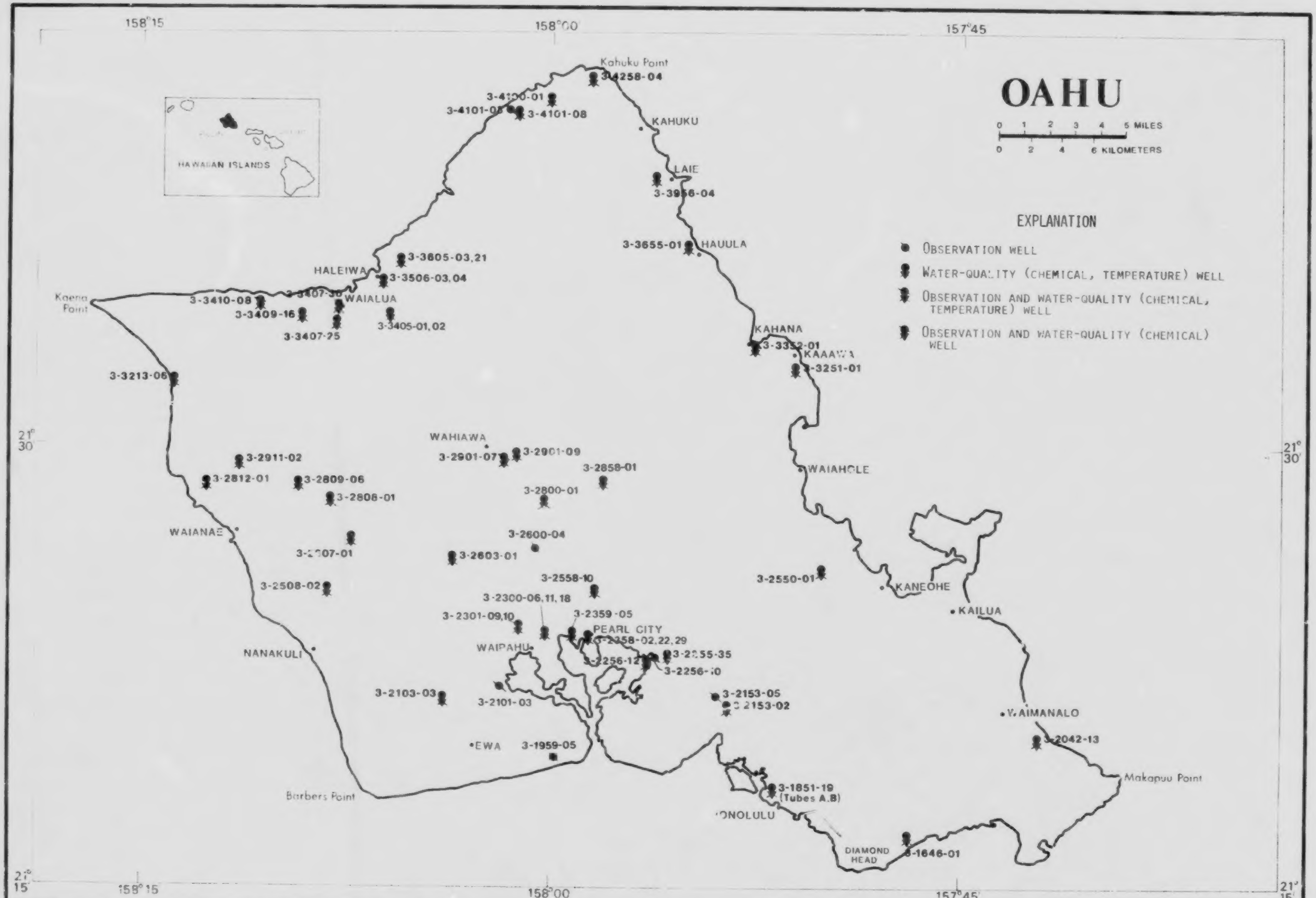

OAHU
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
EXPLANATION
Observation well
Water-quality (chemical, temperature) well
Observation and water-quality (chemical, temperature) well
Observation and water-quality (chemical) well
HAWAIIAN ISLANDS
158°15
158°00
157°45
21° 30
21° 15
Kahuku Point
3-4258-04
3-4100-01
3-4101-08
3-4101-08
KAHUKU
LAIE
3-3956-04
3-3655-01
HAUULA
HALEIWA
3-3605-03,21
3-3506-03,04
Kaena Point
3-3410-08
3-3407-30
WAIALUA
3-3409-16
3-3407-25
3-3405-01,02
KAHANA
3-3352-01
KAAAWA
3-3251-01
3-3213-06
WAHIAWA
3-2901-07
3-2901-09
3-2911-02
3-2858-01
3-2812-01
3-2809-06
3-2808-01
3-2800-01
WAIAHOLE
WAIANAE
3-2600-04
3-2707-01
3-2603-01
3-2558-10
3-2550-01
3-2508-02
KANEOHE
3-2300-06,11,18
KAILUA
3-2301-09,10
3-2359-05
PEARL CITY
3-2358-02,22,29
WAIPAHU
3-2355-35
NANAKULI
3-2256-12
3-2256-10
3-2153-05
3-2103-03
3-2153-02
3-2101-03
WAIMANALO
EWA
3-1959-05
3-2042-13
Makapuu Point
3-1851-19 (Tubes A,B)
Barbers Point
HONOLULU
DIAMOND HEAD
3-1646-01

Figure 5.--Locations of observation wells and ground-water quality sampling sites on Oahu.

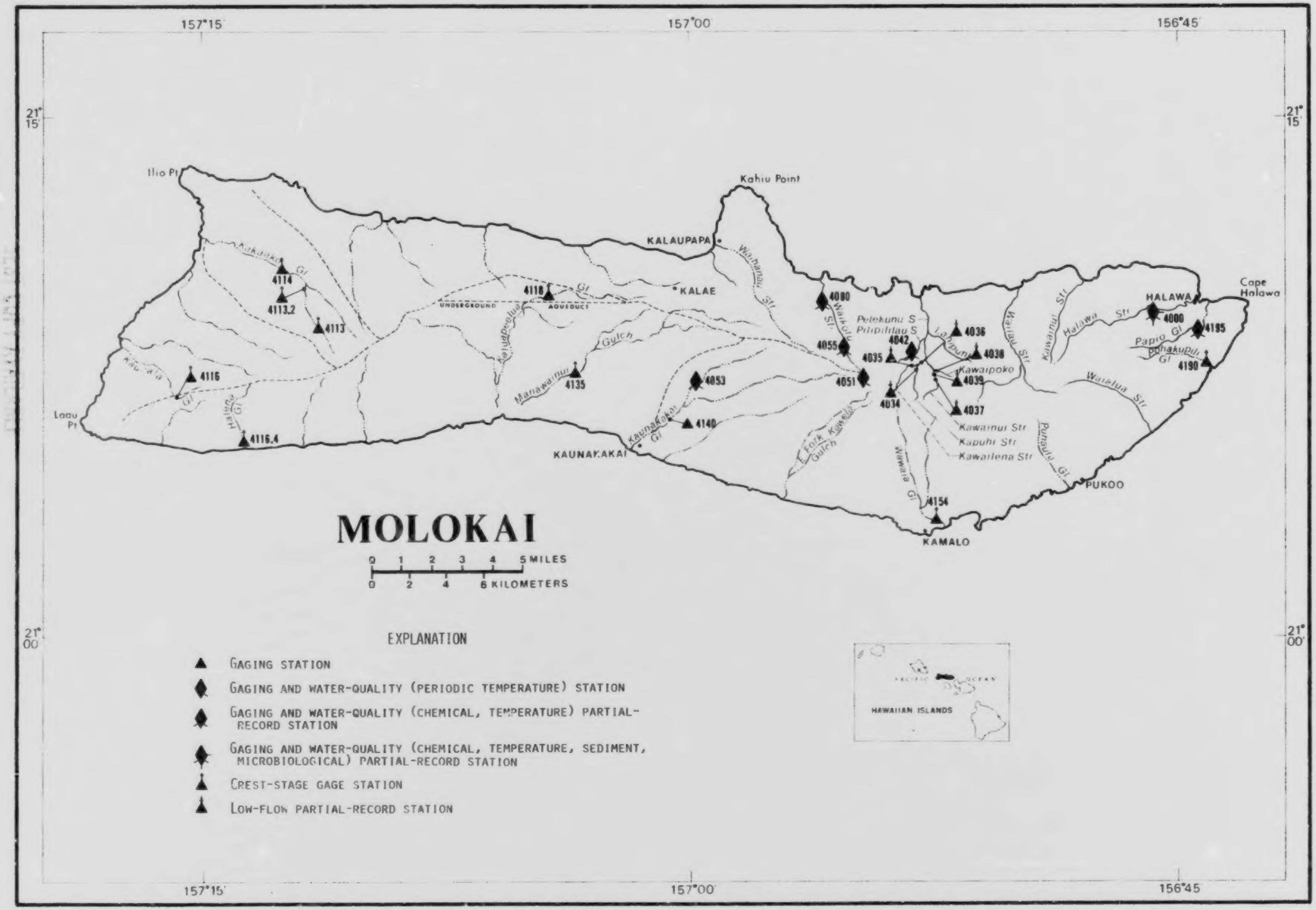
157°15'
157°00'
156°45'
21° 15'
21° 00'
MOLOKAI
Ilio Pt
Kahiu Point
KALAUPAPA
KALAE
Cape Halawa
HALAWA
Laau Pt
KAUNAKAKAI
KAMALO
PUKOO
Kakaako Gl
Kaunala Gl
Halena Gl
Kaluapeelua Gl
Manawainui Gulch
Kaunakakai Gl
E Fork Kawela Gulch
Waihanau Str
Waikolu Str
Pelekunu S
Pilipililau S
Lanipuni
Kawaipoko
Kawainui Str
Kapuhi Str
Kawailena Str
Wawaia Gl
Wailau Str
Kawainui Str
Halawa Str
Papio Gl
Pohakupili Gl
Waialua Str
Puniuohua Gl
UNDERGROUND AQUEDUCT
4114
4113.2
4113
4116
4116.4
4118
4135
4140
4053
4051
4055
4080
4035
4042
4034
4036
4038
4039
4037
4154
4000
4195
4190
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
EXPLANATION
▲ Gaging station
Gaging and water-quality (periodic temperature) station
Gaging and water-quality (chemical, temperature) partial-record station
Gaging and water-quality (chemical, temperature, sediment, microbiological) partial-record station
Crest-stage gage station
Low-flow partial-record station
PACIFIC OCEAN
HAWAIIAN ISLANDS

Figure 6.--Locations of gaging, water-quality, and partial-record stations on Molokai.

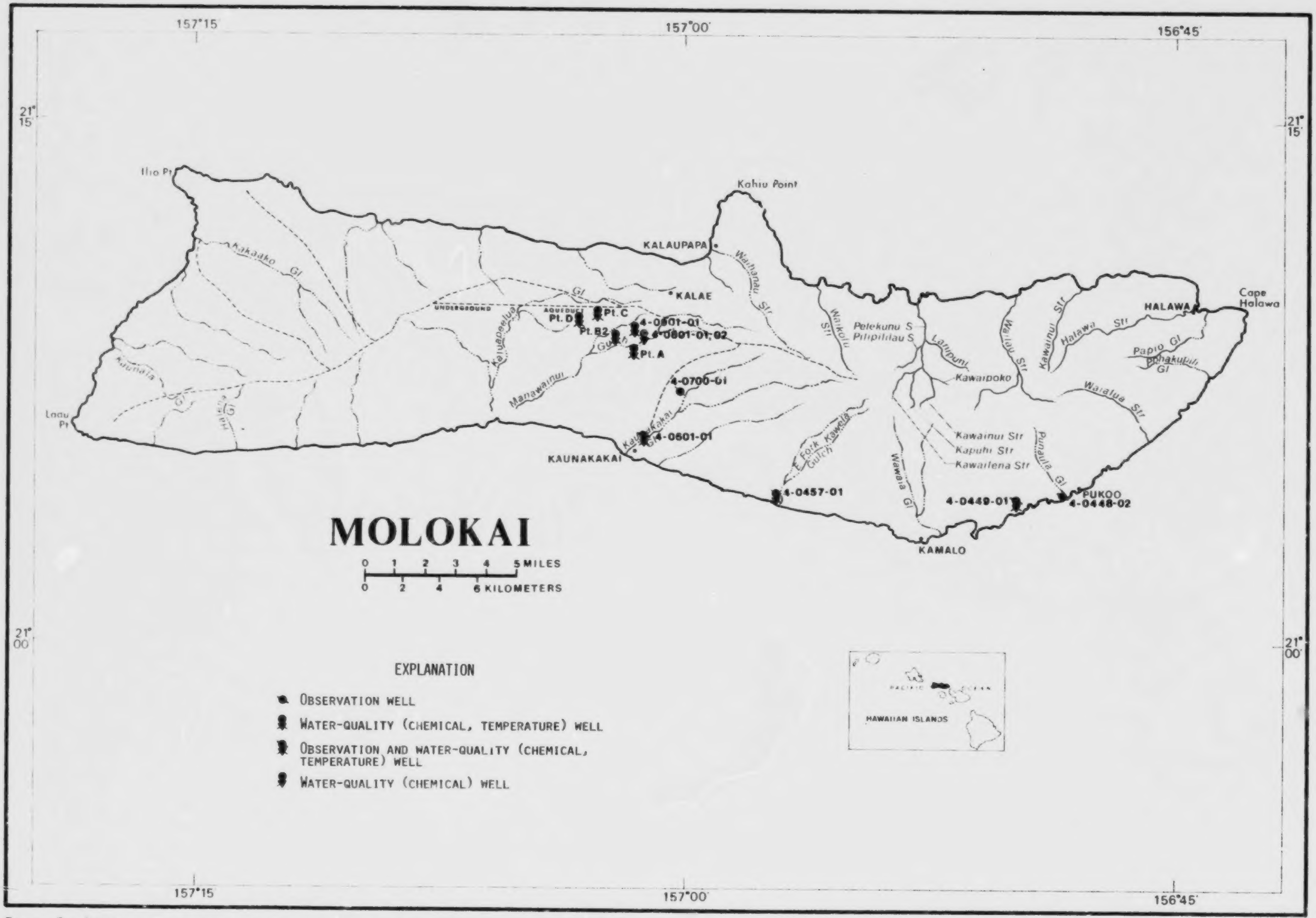
157°15'
157°00'
156°45'
21° 15'
21° 00'
Ilio Pt
Kahiu Point
KALAUPAPA
KALAE
Kakaako Gl
Waihanau Str
Waikolu Str
Pelekunu S
Pilipilau S
Lanipuni
Kawaipoko
Wailau Str
Kawainui Str
Halawa Str
HALAWA
Cape Halawa
Papio Gl
Pohakupili Gl
Waialua Str
Kawainui Str
Kapuhi Str
Kawailena Str
Puniaula Gl
PUKOO
4-0448-02
4-0449-01
KAMALO
Wawaia Gl
E Fork Kawela Gulch
4-0457-01
4-0501-01
Kaunakakai Gl
KAUNAKAKAI
4-0700-01
Manawainui
Kaluapeelua
UNDERGROUND
AQUEDUCT
Gl
Pt. C
Pt. D
Pt. B2
4-0801-01
4-0801-01, 02
Pt. A
Gulch
Kaunala
Gl
Laau Pt
MOLOKAI
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
EXPLANATION
● Observation well
Water-quality (chemical, temperature) well
Observation and water-quality (chemical, temperature) well
Water-quality (chemical) well
PACIFIC OCEAN
HAWAIIAN ISLANDS

Figure 7.--Locations of observation wells and ground-water quality sampling sites on Molokai.

15

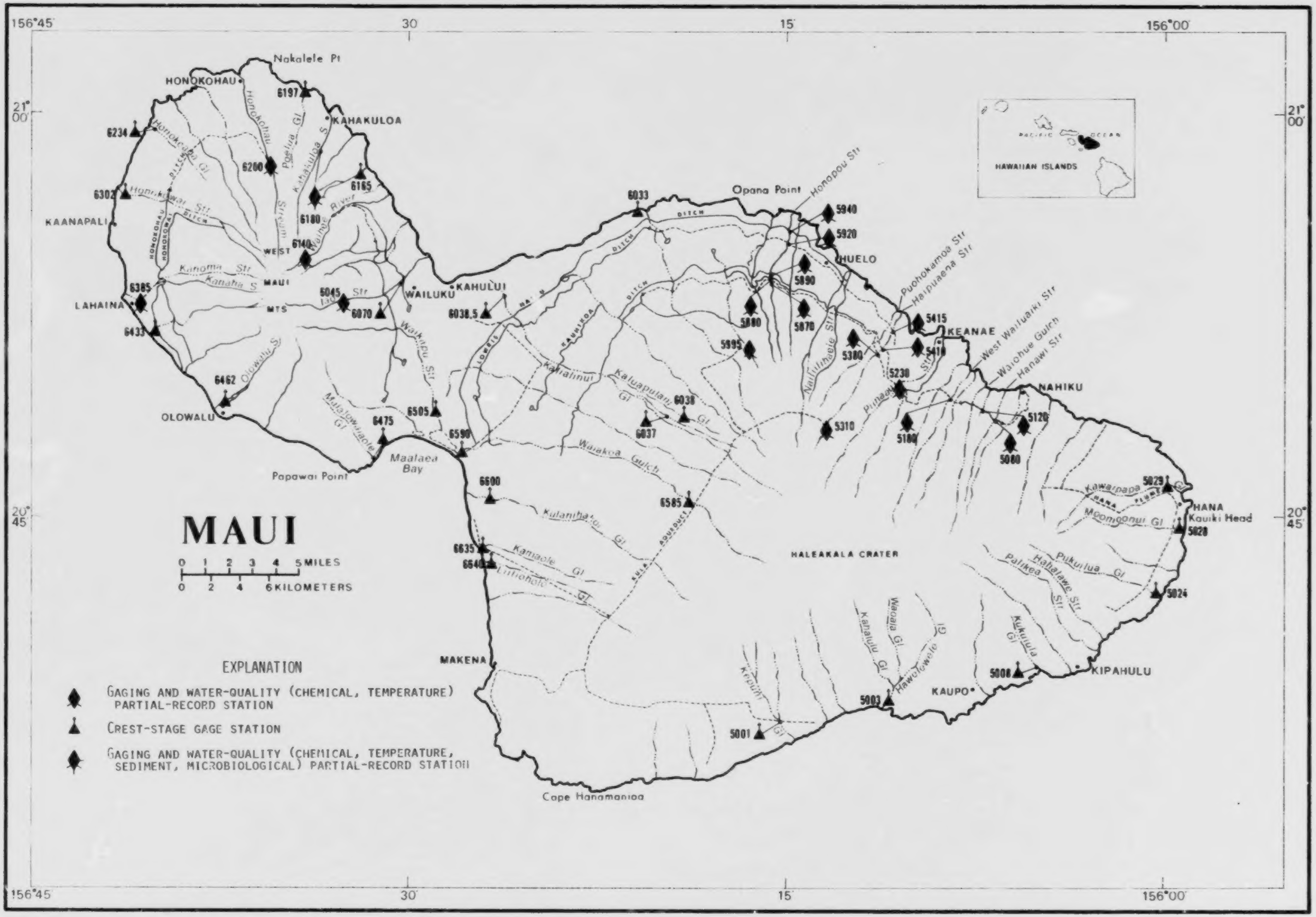
MAUI
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
EXPLANATION
♦ GAGING AND WATER-QUALITY (CHEMICAL, TEMPERATURE) PARTIAL-RECORD STATION
▲ CREST-STAGE GAGE STATION
♦ GAGING AND WATER-QUALITY (CHEMICAL, TEMPERATURE, SEDIMENT, MICROBIOLOGICAL) PARTIAL-RECORD STATION
HAWAIIAN ISLANDS
PACIFIC OCEAN
156°45'
30'
15'
156°00'
21° 00'
20° 45'
Nakalele Pt
HONOKOHAU
KAHAKULOA
KAANAPALI
WEST MAUI MTS
LAHAINA
OLOWALU
Papawai Point
Maalaea Bay
WAILUKU
KAHULUI
Opana Point
HUELO
KEANAE
NAHIKU
HANA
Kauiki Head
KIPAHULU
KAUPO
MAKENA
Cape Hanamanioa
HALEAKALA CRATER
6197
6234
6200
6165
6302
6180
6140
6385
6433
6045
6070
6462
6475
6505
6590
6038.5
6033
6038
6037
6600
6585
6635
6640
5940
5920
5890
5880
5870
5995
5380
5415
5410
5230
5310
5180
5120
5060
5029
5028
5024
5008
5003
5001
Honokohau Str
Honokowai Str
Kanaha S
Kahoma Str
Iao Str
Olowalu Str
Waikapu Str
Honopou Str
Puohokamoa Str
Haipuaena Str
West Wailuaiki Str
Waiohue Gulch
Hanawi Str
Kawaipapa Gl
Moomoonui Gl
Pukuilua Gl
Kulanihakoi Gl
Kaonoulu Gl
Waiakoa Gulch
Kaluapulani Gl
Kailua
Kahakuloa S
Kanaio Gl
Kipapa Gl
Waiopai Gl
Hawaiwale Gl
Kukuilua Gl
DITCH
KULA AQUEDUCT

FIGURE 8.--LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS ON MAUI.

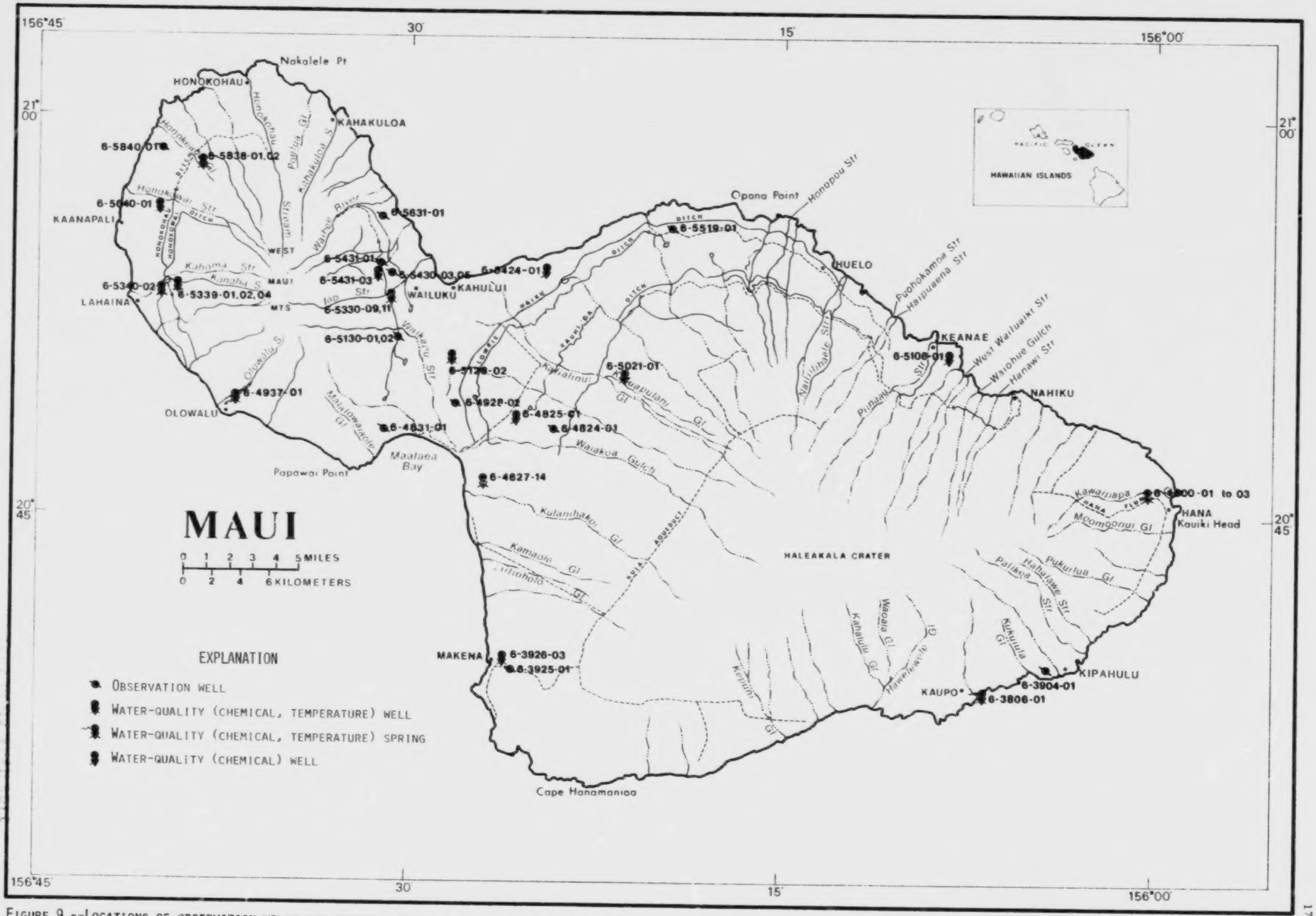
156°45'
30'
15'
156°00'
21° 00'
20° 45'
Nakalele Pt
HONOKOHAU
KAHAKULOA
Honokohau Str
Honokahau Ditch
Papua Gl
Kahakuloa S
Stream
6-5840-01
6-5838-01,02
6-5640-01
Honokowai Str
KAANAPALI
Waihee River
6-5631-01
WEST
Kahoma Str
Kanaha S
MAUI
MTS
6-5431-01
6-5431-03
6-5430-03,05
6-5340-02
6-5339-01,02,04
LAHAINA
Iao Str
WAILUKU
KAHULUI
6-5424-01
6-5330-09,11
6-5130-01,02
Waikapu Str
Olowalu S
6-4937-01
OLOWALU
Manawainui Gl
6-4831-01
Maalaea Bay
Papawai Point
6-5129-02
6-4928-02
6-4825-01
6-4824-01
6-5021-01
Kaupakalua Gl
Waiakoa Gulch
6-4627-14
Opana Point
Honopou Str
6-5519-01
DITCH
HUELO
Puohokamoa Str
Haipuaena Str
Nailiilihaele Str
KEANAE
6-5108-01
West Wailuaiki Str
Waiohue Gulch
Hanawi Str
Piinaau Str
NAHIKU
Kawaipapa
HANA
6-4900-01 to 03
Moomoonui Gl
Kauiki Head
MAUI
0 1 2 3 4 5 MILES
0 2 4 6 KILOMETERS
Kulanihakoi Gl
Kamaole Gl
Waiohuli Gl
Kula Aqueduct
HALEAKALA CRATER
Pukulua Gl
Hahalawe Str
Palikea Str
Kukuiula Gl
Waiopai Gl
Kahaluu Gl
Kepuni Gl
Haleakala Gl
KIPAHULU
6-3904-01
KAUPO
6-3806-01
MAKENA
6-3926-03
6-3925-01
Cape Hanamanioa
HAWAIIAN ISLANDS
PACIFIC OCEAN
EXPLANATION
Observation well
Water-quality (chemical, temperature) well
Water-quality (chemical, temperature) spring
Water-quality (chemical) well

Figure 9.--Locations of observation wells and ground-water quality sampling sites on Maui.

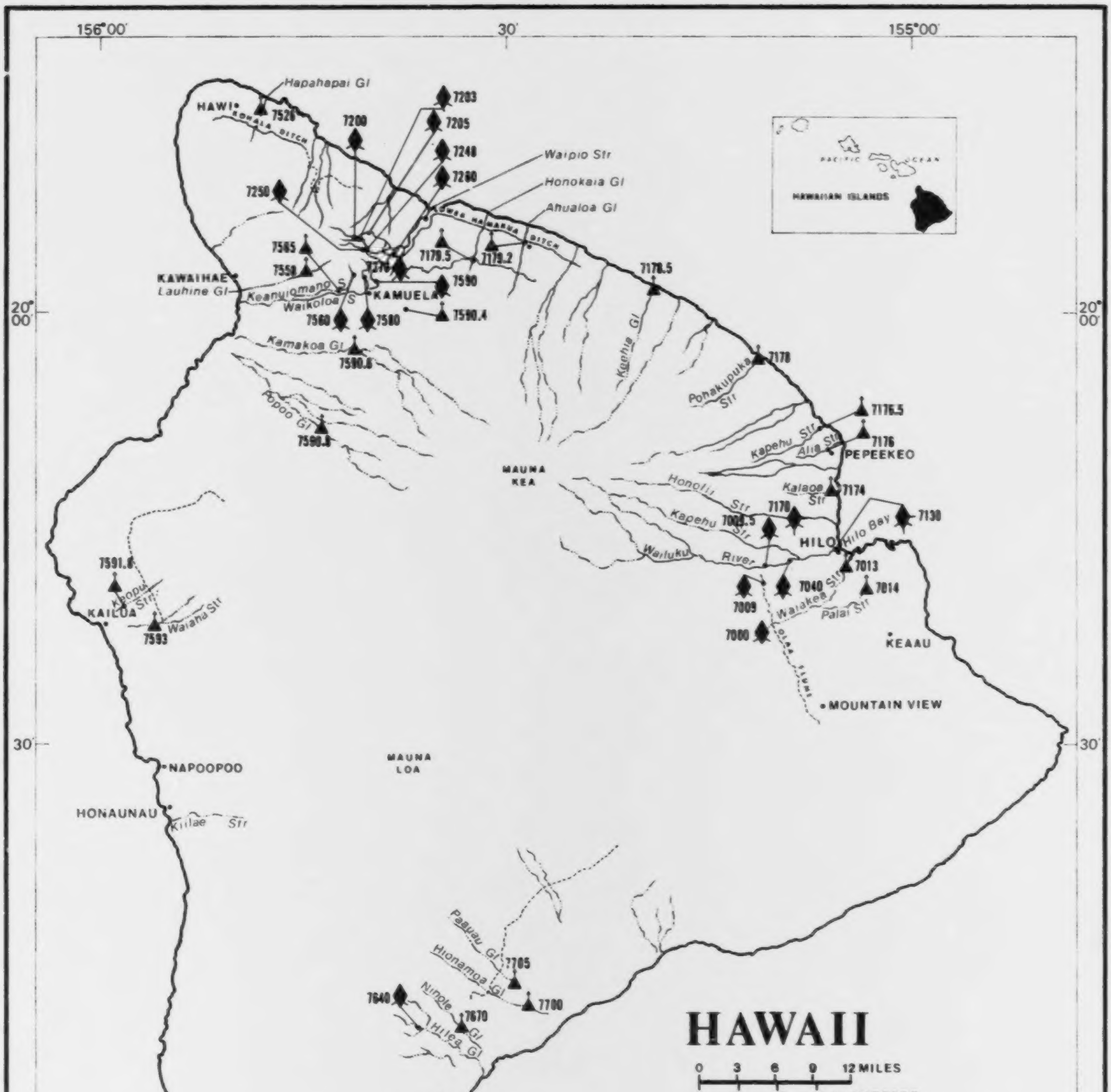
HAWAII
Hapahapai Gl
Waipio Str
Honokaia Gl
Ahualoa Gl
KAWAIHAE
Lauhine Gl
KAMUELA
HAWI
Kohala Ditch
Lower Hamakua Ditch
Kamakoa Gl
Popoo Gl
Kaohia Gl
Pohakupuka Str
Kapehu Str
Alia Str
PEPEEKEO
Honolii Str
Kalaoa Str
Kapehu Str
Wailuku River
Hilo Bay
HILO
Waiakea Str
Palai Str
KEAAU
MOUNTAIN VIEW
MAUNA KEA
MAUNA LOA
KAILUA
Waiaha Str
NAPOOPOO
HONAUNAU
Kiilae Str
Paauau Gl
Hionamoa Gl
Ninole Gl
Hilea Gl
Kalae
0 3 6 9 12 MILES
0 5 10 15 KILOMETERS
HAWAIIAN ISLANDS
PACIFIC OCEAN
156°00'
30'
155°00'
20° 00'
19° 00'
EXPLANATION
Gaging and water-quality (chemical, temperature) partial-record station
Gaging and water-quality (chemical, temperature, sediment, microbiological) daily and partial-record station
Crest-stage gage station
7520
7200
7203
7205
7248
7260
7250
7565
7558
7570
7179.5
7179.2
7178.5
7590
7590.4
7560
7580
7590.6
7590.8
7178
7176.5
7176
7174
7170
7000.5
7130
7013
7014
7040
7009
7000
7591.6
7593
7705
7700
7640
7670

Figure 10.--Locations of gaging, water-quality, and partial-record stations on Hawaii.

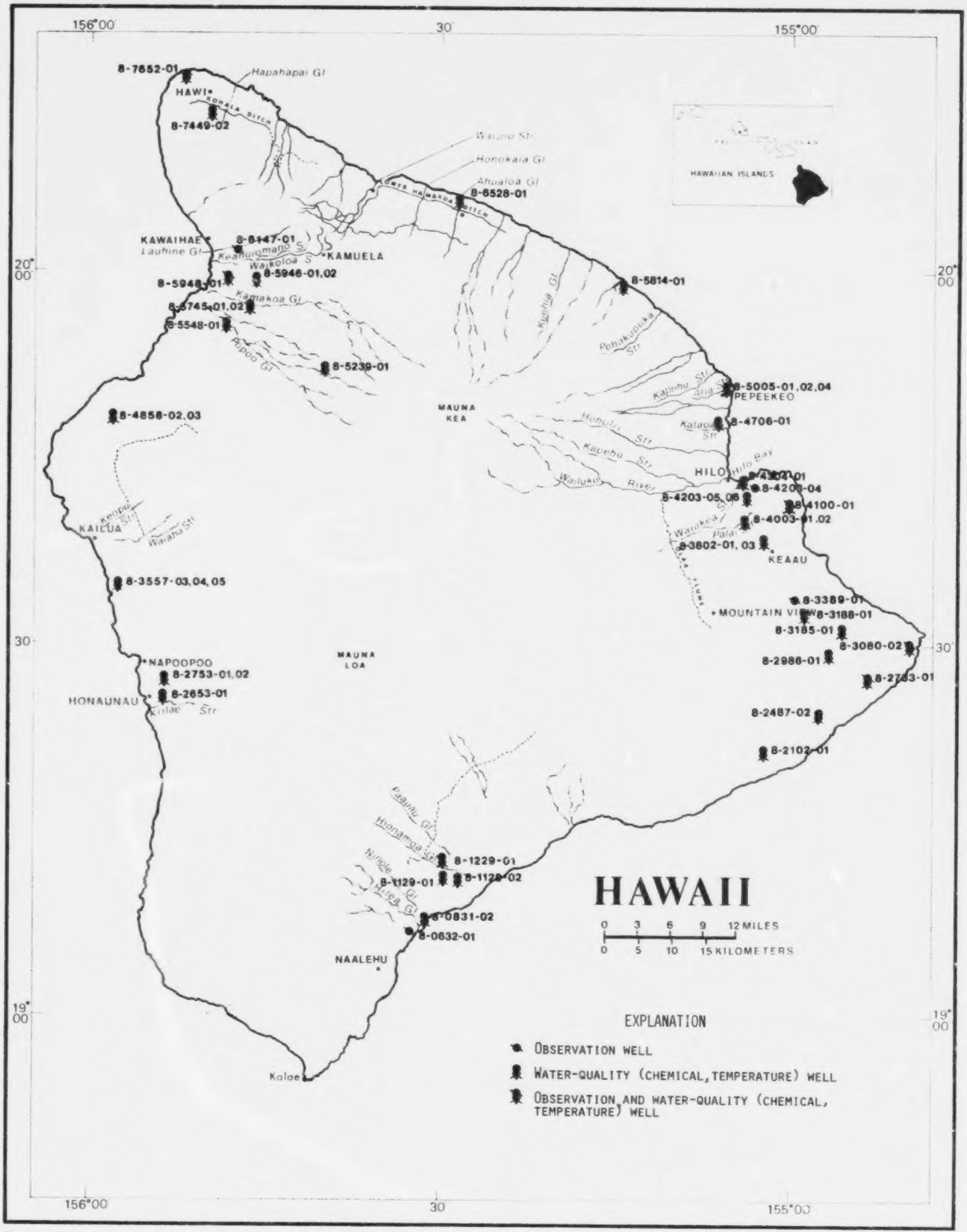
156°00'
30'
155°00'
20° 00'
30'
19° 00'
8-7652-01
Hapahapai Gl
HAWI
KOHALA DITCH
8-7449-02
Waipio Str
Honokaia Gl
Ahualoa Gl
8-6528-01
LOWER HAMAKUA DITCH
KAWAIHAE
Lauhine Gl
8-6147-01
Keanuiomano S
KAMUELA
Waikoloa S
8-5948-01
8-5946-01,02
8-5745-01,02
Kamakoa Gl
8-5548-01
Popoo Gl
8-5239-01
8-5814-01
Kuehia Gl
Pohakupuka Str
8-5005-01,02,04
PEPEEKEO
Kapehu Str
Alia Str
Kalaoa Str
8-4706-01
Honolii Str
Kapehu Str
Wailuku River
MAUNA KEA
HILO
Hilo Bay
8-4304-01
8-4203-04
8-4203-05,06
8-4100-01
8-4003-01,02
Waiakea Str
Palai Str
8-3802-01,03
KEAAU
8-4858-02,03
Keopu Str
KAILUA
Waiaha Str
8-3557-03,04,05
8-3389-01
MOUNTAIN VIEW
8-3188-01
8-3185-01
8-3080-02
8-2988-01
8-2783-01
8-2487-02
8-2102-01
NAPOOPOO
8-2753-01,02
8-2653-01
HONAUNAU
Kiilae Str
MAUNA LOA
Paauau Gl
Hionamoa Gl
Ninole Gl
Hilea Gl
8-1229-01
8-1129-01
8-1129-02
8-0831-02
8-0632-01
NAALEHU
Kalae
HAWAIIAN ISLANDS
HAWAII
0 3 6 9 12 MILES
0 5 10 15 KILOMETERS
EXPLANATION
Observation well
Water-quality (chemical, temperature) well
Observation and water-quality (chemical, temperature) well

FIGURE 11.--LOCATIONS OF OBSERVATION WELLS AND GROUND-WATER QUALITY SAMPLING SITES ON HAWAII.

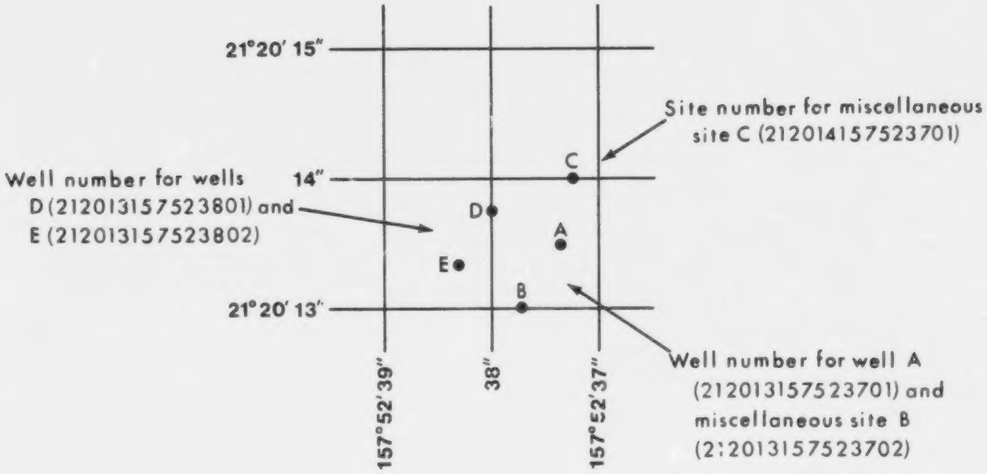
21°20' 15"
Site number for miscellaneous site C (212014157523701)
C
Well number for wells D(212013157523801) and E (212013157523802)
14"
D
A
E
B
21°20' 13"
Well number for well A (212013157523701) and miscellaneous site B (212013157523702)
157°52'39"
38"
157°52'37"

Figure 12. Sketch showing system for numbering wells and miscellaneous sites

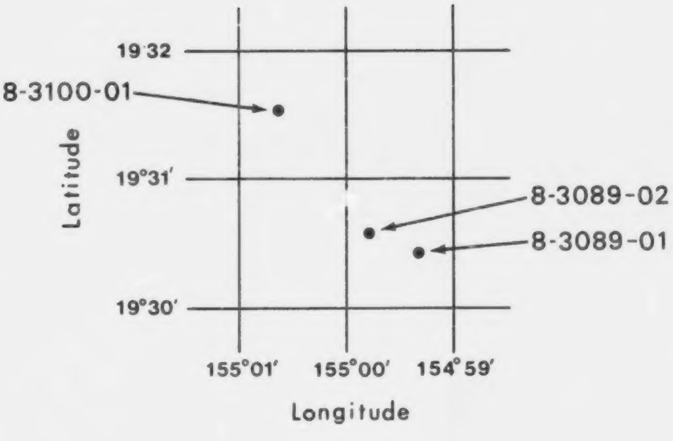
19 32
8-3100-01
Latitude
19°31'
8-3089-02
8-3089-01
19°30'
155°01'
155°00'
154°59'
Longitude

Figure 13. Sketch showing local well numbering system

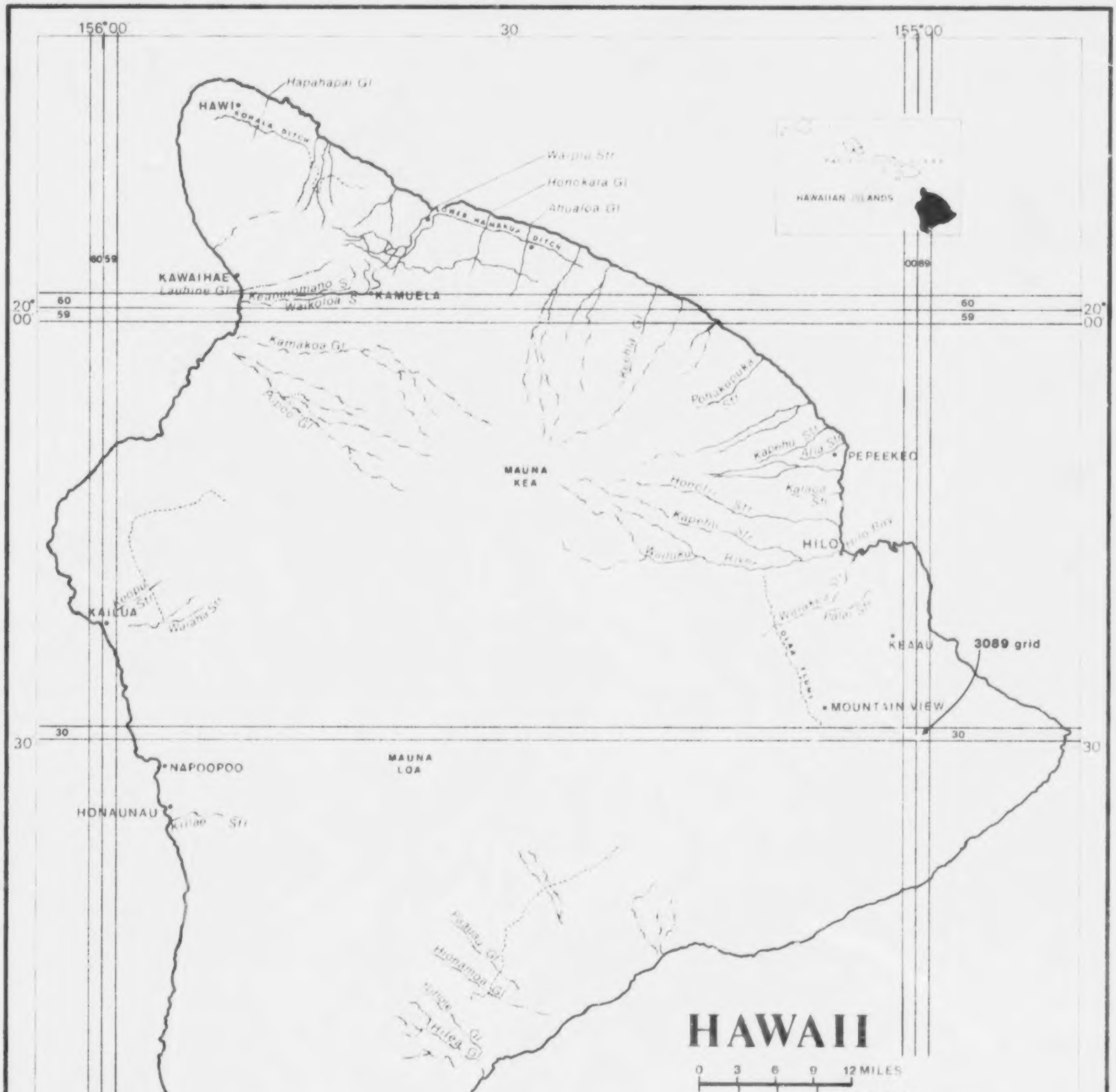
156°00
30
155°00
Hapahapai Gl
HAWI
KOHALA DITCH
Waipio Str
Honokaia Gl
Ahualoa Gl
LOWER HAMAKUA DITCH
HAWAIIAN ISLANDS
60 59
0089
KAWAIHAE
Lauhine Gl
Keanuiomano S
Waikoloa S
KAMUELA
20°
00
60
59
Kamakoa Gl
Hakalau Gl
Ponahawai Str
Kapehu Str
Alia Str
PEPEEKEO
MAUNA
KEA
Honolii Str
Kalaoa Str
Kapehu Str
HILO
Hilo Bay
Wailuku River
Keopu Str
KAILUA
Waiaha Str
Waiakea Str
Palai Str
OLAA FLUME
KEAAU
3089 grid
MOUNTAIN VIEW
30
MAUNA
LOA
NAPOOPOO
HONAUNAU
Kiilae Str
Pauau Gl
Honamoa Gl
Hilea Gl
HAWAII
0 3 6 9 12 MILES
0 5 10 15 KILOMETERS
NAALEHU
19°
00
00
89
Kalae

FIGURE 14.--MAP OF HAWAII SHOWING SYSTEM FOR NUMBERING LOCAL WELL NUMBERS.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely to be governed solely by natual conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network is an accounting network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated in the network design. Areal configuration of the network is based on the river-basin accounting units designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of station which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent of continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to computed daily discharge or contents. This happens when the recorder stop or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations, in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging station on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharge were revised. If the drainage area has been revised, the report in which the revised figures was first published is given.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE", it is not given for stations having fewer than 5 complete years of record or for station where changes to water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected.

For most gaging station on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22092, maintains an index of water-data sites not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperature, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbers of water-supply papers containing detailed information on major floods in the area. Records for stations in Hawaii and other Pacific areas for the period October 1959 to September 1965, are in Water-Supply Paper 1937.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the United States" have been published; the first series covers the entire period of record through September 1950 (June 1950, for Hawaii), and the second series covers the period October 1950 to September 1960 (July 1950 to June 1960, for Hawaii and other Pacific areas). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some record not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station. Records for stations in Hawaii and other Pacific areas are compiled in Water-Supply Paper 1319 through June 1950, in 1739 and 1751 for July 1950 to June 1960, in 1937 for October 1959 to September 1965, and 2137 for October 1966 to September 1970.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The water-quality records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives periods of record for the various types of water-quality data (chemical, specific conductance, biological determination, water temperatures, sediment discharge), period of record, and extremes of pertinent data, and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water-quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained several verticals in the cross section, or a single or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration time 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Hawaii and other Pacific areas are listed below.

Water year	WSP No.	Water year	WSP No.	Water year	WSP No.
1964	1966	1967	2016	1970	2160
1965	1966	1968	2016		
1966	1996	1969	2150		

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitiude and (2) a local number that is provided for local needs. See figure 13.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom). To show the intraday variation in the ground-water levels caused by local pumping and tidal fluctuations, instantaneous maximum and minimum water levels are given with the mean water levels for the day.

Water levels are reportd to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Publications

Publication of ground-water level data for the United States in Water-Supply Papers was begun by the Geological Survey in 1935. From 1935 through 1939, a single Water-Supply Paper for each year covering the entire nation was issued (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate Water-Supply Papers were issued for 6 sections of the United States. Water-level data for Hawaii are in the Water-Supply Papers listed below each report containing one or more calendar years (January-December) of data. Data in this report are for the 12-month water year ending September 30.

Calendar year	WSP No.	Calendar year	WSP No.	Calendar year	WSP No.	Calendar year	WSP No.
1935	777	1942	949	1949	1161	1956-60	1770
1936	817	1943	991	1950	1170	1961-65	1855
1937	840	1944	1021	1951	1196	1966-70	2010
1938	845	1945	1028	1952	1226	1971-74	2162
1939	886	1946	1076	1953	1270		
1940	911	1947	1101	1954	1326		
1941	941	1948	1131	1955	1409		

ACCESS TO WATSTORE DATA

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's district offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature—influential factors, field measurement, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents,* by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5, 1967. 29 pages.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel and dispersion in streams by dye tracing,* by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction,* by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers,* by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells,* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy,* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water,* by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels,* by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

8-A1. *Methods of measuring water levels in deep wells,* by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

HAWAII, ISLAND OF KAUAI

16010000 KAWAIKOI STREAM NEAR WAIMEA

LOCATION.--Lat 22°08'09", long 159°37'22", Hydrologic Unit 20070000, on left bank 0.2 mi upstream from Kokee-Mohihi Road crossing, 2.5 mi east of Kokee Lodge, and 12.5 mi north of Waimea.

DRAINAGE AREA.--3.95 mi^2.

PERIOD OF RECORD.--April 1909 to October 1912, December 1912 to March 1913, May 1913 to June 1915, August 1915 to May 1916, July to December 1916, July 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 555: 1920-21. WSP 1185: 1914-17(M), 1920-38(M), 1940-43(M), 1947(M). WSP 1719: 1912, 1921-25, 1927-32, 1936. WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,420 ft, by barometer. Prior to May 26, 1910, nonrecording gage at site 300 ft downstream at different datum.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--67 years (water years 1912, 1914, 1920-84), 34.4 ft^3/s (24,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft^3/s Jan. 13, 1967, gage height, 15.33 ft, from rating curve extended above 470 ft^3/s on basis of slope-area measurements at gage heights 12.12 ft and 13.43 ft; minimum, 1.14 ft^3/s Sept. 21, 22, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 905 ft^3/s Oct. 20, gage height, 5.89 ft, no peak above base of 2,100 ft^3/s; minimum, 1.8 ft^3/s Sept. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	23	4.8	5.2	52	5.9	109	7.4	4.6	5.5	2.9	1.9
2	13	16	4.6	4.7	80	69	23	7.2	4.8	4.3	2.7	1.9
3	14	25	4.6	4.6	18	16	22	6.8	4.7	5.8	2.6	2.2
4	11	13	4.5	69	13	121	16	6.6	4.7	18	2.6	2.3
5	7.9	10	4.4	124	14	16	17	6.5	4.2	9.6	2.9	1.9
6	6.9	9.2	4.3	21	21	9.3	19	7.0	4.0	6.3	2.7	1.9
7	6.6	8.5	4.2	10	14	7.5	40	6.7	4.2	4.4	2.5	1.9
8	67	7.9	4.2	7.7	11	6.7	21	6.3	5.2	3.8	2.4	1.9
9	15	7.4	4.0	6.6	8.9	6.2	67	5.8	4.5	3.5	2.4	2.5
10	35	7.2	4.1	6.2	7.7	5.8	77	5.5	4.3	3.6	2.3	3.1
11	13	13	4.1	5.7	7.0	5.6	77	5.4	14	13	2.3	9.2
12	8.6	18	4.2	38	6.6	6.1	32	5.2	19	6.6	2.4	5.3
13	7.3	12	17	36	6.3	6.1	174	5.0	33	4.4	3.4	3.6
14	7.0	9.3	7.1	11	7.0	5.4	131	4.9	8.6	3.6	3.4	2.7
15	9.7	7.6	5.0	34	12	5.2	26	5.0	5.8	3.5	2.8	2.8
16	9.3	6.6	4.5	12	11	4.9	25	6.5	22	6.7	2.5	3.7
17	7.7	6.3	4.1	110	13	4.7	32	5.3	23	7.4	2.5	30
18	7.9	5.9	8.0	55	9.3	4.6	54	14	9.6	5.1	2.6	13
19	112	38	26	53	22	21	22	7.3	6.0	5.2	2.6	5.9
20	300	26	6.8	19	16	12	19	11	5.0	5.1	2.4	3.7
21	25	9.8	17	13	14	6.4	14	7.6	4.6	5.5	2.3	2.8
22	15	7.4	9.0	10	8.1	5.2	13	11	4.8	4.7	2.2	2.4
23	13	6.4	5.4	9.3	6.5	4.7	16	7.5	5.1	3.8	2.2	2.2
24	12	6.0	31	17	5.8	4.5	12	6.0	5.5	3.4	3.5	2.1
25	13	5.7	114	12	5.5	4.3	9.7	5.8	5.6	3.1	2.9	7.7
26	127	5.5	19	8.8	5.5	4.3	8.9	6.5	5.2	3.0	2.5	5.0
27	59	5.3	8.8	7.9	6.1	32	9.9	5.4	7.8	2.9	2.2	5.0
28	24	5.1	13	7.5	6.2	32	10	4.8	6.6	2.8	2.1	3.8
29	24	5.1	11	15	5.5	206	8.5	4.8	4.7	2.7	2.0	3.4
30	38	4.9	7.1	28	---	45	7.9	5.6	6.5	2.7	2.0	2.8
31	30	---	5.9	19	---	36	---	5.1	---	3.0	2.0	---
TOTAL	1076.9	331.1	371.7	780.2	413.0	719.4	1112.9	205.5	247.6	163.0	78.8	138.6
MEAN	34.7	11.0	12.0	25.2	14.2	23.2	37.1	6.63	8.25	5.26	2.54	4.62
MAX	300	38	114	124	80	206	174	14	33	18	3.5	30
MIN	6.6	4.9	4.0	4.6	5.5	4.3	7.9	4.8	4.0	2.7	2.0	1.9
AC-FT	2140	657	737	1550	819	1430	2210	408	491	323	156	275

CAL YR 1983 TOTAL 8808.0 MEAN 24.1 MAX 300 MIN 3.8 AC-FT 17470
WTR YR 1984 TOTAL 5638.7 MEAN 15.4 MAX 300 MIN 1.9 AC-FT 11180

16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA

LOCATION.--Lat 22°05'20", long 159°34'18", Hydrologic Unit 20070000, on left bank 5.0 mi northeast of mouth, 6.4 mi southeast of Kokee Lodge, and 11 mi northeast of Waimea.

DRAINAGE AREA.--1.79 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1920 to July 1932, June 1952 to current year. Prior to July 1954, published as Waialae River at altitude 3,700 ft near Waimea.

REVISED RECORDS.--WSP 1937: 1921, 1922-32(M), 1953(M), 1954. WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,820 ft, from topographic map.

REMARKS.--Records good. No diversion above station.

AVERAGE DISCHARGE.--43 years (water years 1921-31, 1953-84), 22.2 ft^3/s (16,080 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,530 ft^3/s Jan. 16, 1921, gage height, 8.44 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement at gage height 4.60 ft; minimum, 0.99 ft^3/s May 17, 18, May 30 to June 2, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 719 ft^3/s Feb. 1, gage height, 3.40 ft, no peak above base of 1,300 ft^3/s; minimum, 1.3 ft^3/s Sept. 5-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	8.4	2.8	3.4	128	54	23	5.2	2.3	4.8	1.8	1.5
2	13	8.0	2.8	2.9	37	40	8.8	7.2	2.3	3.4	1.7	1.5
3	12	9.6	2.8	2.8	11	17	8.0	6.0	2.3	2.9	2.2	1.8
4	11	7.6	2.9	3.4	7.2	25	6.4	5.5	2.2	3.4	19	1.6
5	7.6	5.8	2.8	15	6.0	8.4	5.0	5.5	2.0	3.4	6.0	1.3
6	5.5	4.8	2.6	8.0	5.5	5.2	6.8	4.2	2.0	3.2	2.9	1.3
7	5.2	4.5	2.4	4.2	5.0	4.2	10	3.5	2.2	2.6	2.2	1.4
8	28	4.0	2.3	3.4	4.5	3.8	7.6	4.0	2.3	2.3	1.8	1.5
9	11	3.4	2.3	3.0	7.0	3.4	29	3.8	7.1	2.2	1.7	1.6
10	39	3.4	2.3	2.8	7.2	3.2	124	3.5	5.5	2.2	1.7	1.7
11	12	3.4	2.3	2.6	4.8	3.2	102	3.2	19	2.3	1.8	1.9
12	8.8	3.4	3.5	2.9	4.0	3.2	15	2.9	38	2.0	3.3	1.6
13	7.6	3.5	11	4.5	3.4	3.2	33	2.8	33	2.0	11	1.5
14	6.4	3.5	4.8	4.5	4.2	3.0	47	2.6	6.4	1.9	6.1	1.4
15	7.2	3.4	3.2	4.0	11	2.9	10	3.2	4.2	1.9	2.9	2.4
16	6.4	3.0	2.8	3.4	12	2.8	8.0	2.9	43	1.9	2.0	2.4
17	5.0	3.0	2.6	91	12	2.6	8.8	2.9	49	2.0	1.9	2.2
18	5.0	2.9	3.5	58	7.2	2.4	41	16	8.0	2.6	1.8	2.0
19	14	43	4.0	31	5.5	3.5	19	5.8	4.5	2.4	1.8	2.0
20	145	61	2.9	11	6.0	4.0	27	15	3.5	3.0	1.6	1.9
21	46	11	2.8	6.4	8.8	3.0	49	5.2	25	5.8	1.8	1.6
22	18	7.2	2.6	5.2	5.2	2.8	40	3.8	23	3.8	1.6	1.6
23	20	5.2	2.4	5.0	4.2	2.4	50	4.0	7.2	2.8	19	1.6
24	12	4.2	7.0	66	5.0	2.4	10	32	5.0	2.2	9.2	1.6
25	10	3.8	57	13	4.5	2.3	7.6	8.0	4.2	1.9	4.0	1.7
26	55	3.4	13	14	4.2	2.3	6.4	5.0	4.8	1.8	6.0	5.8
27	29	3.2	5.8	11	3.8	2.8	5.8	3.5	10	1.8	3.4	3.5
28	13	3.2	6.4	11	3.4	5.2	5.0	3.0	5.0	1.8	2.2	2.6
29	12	3.0	5.2	8.4	3.2	33	4.5	2.9	3.5	1.7	1.8	5.3
30	14	2.9	4.0	16	---	12	5.5	2.6	6.8	1.7	1.6	2.6
31	10	---	3.4	15	---	9.2	---	2.4	---	1.7	1.6	---
TOTAL	643.7	236.7	176.2	432.8	330.8	272.4	723.2	178.1	333.3	79.4	127.4	62.4
MEAN	20.8	7.89	5.68	14.0	11.4	8.79	24.1	5.75	11.1	2.56	4.11	2.08
MAX	145	61	57	91	128	54	124	32	49	5.8	19	5.8
MIN	5.0	2.9	2.3	2.6	3.2	2.3	4.5	2.4	2.0	1.7	1.6	1.3
AC-FT	1280	469	349	858	656	540	1430	353	661	157	253	124

CAL YR 1983	TOTAL	4791.1	MEAN	13.1	MAX	226	MIN	1.7	AC-FT	9500
WTR YR 1984	TOTAL	3596.4	MEAN	9.83	MAX	145	MIN	1.3	AC-FT	7130

16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
NOV 17...	1010	2.9	32	7.4	14.5	6	0	.90	.87	3.8	56	.7
FEB 08...	1015	4.4	32	6.7	13.0	5	0	.80	.84	3.7	57	.7
APR 24...	1010	11	30	6.3	15.0	6	4	1.0	.84	3.6	55	.7
JUL 10...	1000	2.2	34	6.3	17.5	10	5	2.3	1.1	4.0	44	.6

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
NOV 17...	.50	7.0	5.3	6.5	<.10	6.8	29	.04	<.10	220	2
FEB 08...	.40	6.0	--	6.4	<.10	4.9	--	--	<.10	240	2
APR 24...	.40	2.0	--	7.5	<.10	2.7	--	--	.12	380	8
JUL 10...	.50	5.0	8.8	6.7	<.10	5.6	32	.04	<.10	300	3

< Actual value is known to be less than the value shown.

16031000 WAIMEA RIVER NEAR WAIMEA
(National stream-quality accounting network station)

LOCATION.--Lat 21°59'02", long 159°39'47", Hydrologic Unit 20070000, on right bank 1.3 mi upstream from Makaweli River and 1.9 mi north of Waimea Post Office.

DRAINAGE AREA.--57.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1910 to June 1918, July to October 1919, November 1943 to September 1968, October 1969 to September 1972 (discontinued as a continuous-record station, converted to a crest-stage partial-record station October 1972 to April 1975), May 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 20.0 ft above mean sea level (Department of Water, County of Kauai bench mark). Prior to Oct. 5, 1911, nonrecording gage at site 1.0 mi downstream at different datum. Oct. 5, 1911, to Oct. 31, 1919, nonrecording gage at present site at different datum.

REMARKS.--Records fair. Several upstream diversions for power and irrigation.

AVERAGE DISCHARGE.--43 years (water years 1911-17, 1945-68, 1970-72, 1976-84), 128 ft³/s (92,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,100 ft³/s Feb. 7, 1949, gage height, 19.3 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurements at gage heights 10.28 ft and 18.7 ft; practically no flow occasionally owing to upstream diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 19, 1974, which destroyed the station reached a stage of 19.05 ft, from floodmarks, discharge, 29,100 ft³/s, from rating curve extended above 2,200 ft³/s on basis of slope-area measurement at gage height 19.05 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft³/s Oct. 20, gage height, 6.79 ft, no peak above base of 8,700 ft³/s; minimum, 4.2 ft³/s May 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	23	6.7	8.7	81	6.6	75	6.5	5.3	6.0	5.5	5.9
2	48	20	7.0	8.7	331	214	29	6.5	5.1	6.2	5.8	5.6
3	15	18	7.1	8.8	38	29	7.3	7.1	5.1	5.6	5.8	5.4
4	13	12	7.3	9.1	12	147	5.9	7.1	5.3	5.8	6.2	6.6
5	12	10	7.1	112	7.7	30	5.2	6.8	5.5	6.5	14	6.2
6	9.4	8.9	7.3	37	6.8	8.1	4.9	7.0	5.9	6.6	7.6	5.5
7	8.6	8.1	7.2	13	6.7	5.7	5.9	6.5	6.2	6.5	6.0	5.6
8	38	8.1	7.1	9.5	6.4	5.3	9.3	6.4	6.0	5.9	5.5	5.6
9	42	8.1	7.2	9.0	6.1	5.3	7.0	6.2	6.0	5.7	5.5	5.9
10	49	7.6	7.5	8.9	6.4	5.6	225	6.2	7.3	5.8	5.5	5.9
11	38	7.8	7.6	9.0	7.0	5.6	226	6.0	7.1	6.2	5.8	6.0
12	13	7.8	8.0	9.3	6.2	5.7	68	5.8	22	7.3	5.5	6.4
13	10	8.4	10	14	6.0	7.0	58	5.6	82	6.0	5.8	6.1
14	9.4	8.6	13	13	6.3	6.0	410	5.4	15	6.0	8.9	5.7
15	8.9	8.4	9.2	12	6.7	5.6	33	5.2	6.3	6.0	8.4	9.8
16	9.1	7.8	8.2	11	14	5.9	8.4	5.1	6.2	6.2	6.6	9.5
17	8.9	7.1	7.7	275	11	5.6	6.0	5.5	74	6.0	6.1	11
18	7.8	7.3	22	290	10	5.5	29	7.1	22	5.8	6.1	8.2
19	7.6	9.7	30	264	7.9	5.4	52	13	6.7	6.4	6.1	6.6
20	601	163	9.9	64	6.7	5.9	23	6.3	5.3	6.6	5.6	5.6
21	89	28	7.8	30	7.3	6.5	56	10	5.1	6.6	6.2	5.6
22	33	11	6.8	31	8.7	5.9	35	6.0	26	8.4	5.9	6.8
23	12	8.6	7.2	51	7.2	5.7	87	5.6	11	7.3	5.8	7.1
24	20	7.1	7.9	143	6.8	5.5	20	47	6.3	6.8	12	6.2
25	20	6.8	353	90	7.0	5.3	8.6	15	5.3	6.0	9.3	6.5
26	123	6.6	87	57	7.1	5.4	8.6	6.1	5.5	5.5	6.9	8.2
27	149	6.4	21	63	6.8	5.5	7.8	5.3	5.4	5.5	7.4	10
28	40	6.6	12	33	6.3	6.2	7.5	5.6	7.8	5.8	7.5	8.6
29	26	6.9	11	30	6.1	208	6.3	5.3	6.2	5.8	6.7	6.9
30	26	7.0	9.8	14	---	107	6.2	4.6	5.0	6.0	5.4	7.3
31	26	---	9.0	15	---	13	---	5.2	---	5.8	5.3	---
TOTAL	1582.7	454.7	729.6	1743.0	647.2	888.8	1530.9	247.0	387.9	192.6	210.7	206.3
MEAN	51.1	15.2	23.5	56.2	22.3	28.7	51.0	7.97	12.9	6.21	6.80	6.88
MAX	601	163	353	290	331	214	410	47	82	8.4	14	11
MIN	7.6	6.4	6.7	8.7	6.0	5.3	4.9	4.6	5.0	5.5	5.3	5.4
AC-FT	3140	902	1450	3460	1280	1760	3040	490	769	382	418	409

CAL YR 1983 TOTAL 14621.3 MEAN 40.1 MAX 601 MIN 6.4 AC-FT 29000
WTR YR 1984 TOTAL 8821.4 MEAN 24.1 MAX 601 MIN 4.6 AC-FT 17500

16031000 WAIMEA RIVER NEAR WAIMEA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971-74, November 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT												
17...	1100	764	9.1	155	7.8	25.0	1.6	8.8	106	290	540	65
DEC												
13...	1015	764	8.4	180	7.5	21.5	2.7	9.3	105	900	4800	72
FEB												
14...	1130	768	6.4	180	8.3	21.0	17	9.6	107	140	330	72
APR												
10...	1145	768	92	84	7.2	22.0	17	9.6	109	1300	2900	28
JUN												
05...	1115	765	5.3	180	8.0	24.5	14	9.6	115	520	610	85
JUL												
13...	1220	--	6.6	200	7.9	27.5	--	9.1	--	270	260	--
AUG												
13...	1045	764	5.7	190	7.4	24.5	5.3	8.6	103	530	280	85

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT											
17...	0	7.9	11	8.7	22	.5	.90	65	3.9	13	<.10
DEC											
13...	0	9.2	12	9.8	23	.5	.80	75	3.8	13	<.10
FEB											
14...	0	9.0	12	9.8	23	.5	.80	79	3.9	14	<.10
APR											
10...	3	3.8	4.5	5.3	29	.4	.70	25	6.0	8.9	<.10
JUN											
05...	4	11	14	11	22	.5	1.1	81	4.0	15	<.10
AUG											
13...	1	11	14	11	22	.5	1.0	84	3.2	13	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT											
17...	25	99	110	.13	<.10	<.010	.90	<.010	<.010	<.010	30
DEC											
13...	28	114	120	.16	<.10	<.010	.40	.010	.010	<.010	--
FEB											
14...	26	116	120	.16	<.10	.050	.20	.010	.020	.040	40
APR											
10...	14	64	59	.09	<.10	.050	.60	.070	.010	.030	40
JUN											
05...	32	129	140	.18	<.10	.010	.60	.040	.030	.020	--
AUG											
13...	31	122	130	.17	<.10	.020	.30	.010	<.010	<.010	10

< Actual value is known to be less than the value shown.

16031000 WAIMEA RIVER NEAR WAIMEA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT 17...	1	12	<.5	<1	<1	<3	2	120	1	5	18
FEB 14...	1	12	.7	<1	<1	<3	3	<3	<1	12	41
APR 10...	<1	10	.8	<1	<1	<3	4	99	<1	<4	11
JUN 05...	--	--	--	--	--	--	--	7	--	--	--
AUG 13...	<1	13	<1	<1	2	<3	4	70	<1	<4	19

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 17...	.1	<10	2	<1	<1	48	<6	5
FEB 14...	<.1	<10	1	<1	<1	58	<6	<3
APR 10...	<.1	<10	2	<1	<1	23	<6	9
AUG 13...	.3	<10	4	2	<1	65	7	3

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 17...	1100	3	.07	100
DEC 13...	1015	4	.09	100
FEB 14...	1130	5	.09	100
APR 10...	1145	26	6.5	--
JUN 05...	1115	26	.37	100
JUL 13...	1220	9	.16	100
AUG 13...	1045	11	.17	100

< Actual value is known to be less than the value shown.

16036000 MAKAWELI RIVER NEAR WAIMEA

LOCATION.--Lat 21°58'31", long 159°38'55", Hydrologic Unit 20070000, on left bank 0.7 mi upstream from mouth and 1.9 mi northeast of Waimea.

DRAINAGE AREA.--26.0 mi^2.

PERIOD OF RECORD.--July 1943 to current year. Records for October 1911 to June 1917 at site 0.2 mi downstream not equivalent owing to intervening diversion.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 18.2 ft above mean sea level (by stadia survey). Prior to June 16, 1959, at datum 1.00 ft higher.

REMARKS.--Records fair. Olokele ditch diverts all low flow from the headwaters of the Olokele River 9 mi above station for irrigation in vicinity of Makaweli. A 5 ft^3/s capacity ditch diverts water from above the station for irrigation of taro in the vicinity of the station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--41 years, 87.7 ft^3/s (63,540 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft^3/s Jan. 31, 1975, gage height, 15.51 ft, from rating curve extended above 3,200 ft^3/s on basis of slope-area measurement at gage height 10.65 ft; minimum, 3.15 ft^3/s July 19, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,680 ft^3/s Feb. 1, gage height 4.93 ft, no peak above base of 4,700 ft^3/s; minimum, 7.8 ft^3/s Aug. 11, 12, 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	31	17	18	288	60	50	31	13	14	8.1	9.3
2	48	26	17	18	149	383	22	48	12	11	8.1	9.3
3	45	23	17	16	42	32	18	18	13	10	25	9.0
4	41	21	17	18	27	58	16	20	13	10	58	12
5	32	18	17	20	22	29	18	17	12	11	16	9.9
6	30	18	30	19	20	24	19	16	12	10	11	9.3
7	32	18	19	17	19	22	19	16	12	9.6	9.6	9.3
8	73	18	17	16	19	22	16	17	12	9.6	9.3	9.6
9	36	18	17	16	18	17	30	20	35	9.6	9.3	9.6
10	112	18	17	16	18	16	200	16	24	12	11	9.6
11	39	18	17	15	16	16	300	15	58	9.9	9.3	9.6
12	44	18	22	14	16	16	70	14	96	9.6	8.4	9.6
13	52	40	22	16	16	16	24	14	108	9.6	9.6	9.6
14	38	18	21	16	23	15	31	14	24	9.9	12	9.9
15	36	18	20	16	36	15	20	16	18	9.3	9.6	18
16	33	18	19	16	38	14	17	14	68	9.3	8.4	34
17	36	18	18	135	26	14	20	18	196	9.3	8.4	34
18	32	18	28	113	20	14	48	30	31	9.9	9.3	19
19	34	102	22	81	16	18	43	14	18	9.3	9.3	14
20	246	212	18	44	22	18	38	19	14	9.9	9.3	12
21	90	38	17	33	37	14	140	18	62	18	9.6	15
22	49	25	16	29	66	13	40	18	74	12	9.6	13
23	57	22	16	60	72	12	50	20	22	9.9	38	17
24	43	20	16	274	106	12	23	38	21	9.3	25	12
25	39	19	66	61	22	12	20	24	14	8.7	14	11
26	105	18	38	57	21	12	20	18	25	8.4	83	34
27	57	18	24	43	34	12	27	18	24	8.4	13	16
28	38	18	29	34	59	14	20	16	14	8.4	11	13
29	38	18	25	26	57	29	17	14	12	8.1	10	11
30	39	17	21	39	---	27	20	13	16	8.1	9.6	10
31	36	---	20	43	---	24	---	13	---	8.1	9.3	---
TOTAL	1838	902	680	1339	1325	1000	1396	597	1073	310.2	491.1	418.6
MEAN	59.3	30.1	21.9	43.2	45.7	32.3	46.5	19.3	35.8	10.0	15.8	14.0
MAX	246	212	66	274	288	383	300	48	196	18	83	34
MIN	30	17	16	14	16	12	16	13	12	8.1	8.1	9.0
AC-FT	3650	1790	1350	2660	2630	1980	2770	1180	2130	615	974	830

CAL YR 1983	TOTAL	13959	MEAN	38.2	MAX	300	MIN	13	AC-FT	27690
WTR YR 1984	TOTAL	11369.9	MEAN	31.1	MAX	383	MIN	8.1	AC-FT	22550

16049000 HANAPEPE RIVER BELOW MANUAHI STREAM, NEAR ELEELE

LOCATION.--Lat 21°57'29", long 159°33'13", Hydrologic Unit 20070000, on left bank 200 ft downstream from Manuahi Stream and 4.0 mi northeast of Eleele.

DRAINAGE AREA.--18.5 mi².

PERIOD OF RECORD.--July 1917 to January 1921, December 1926 to current year. Prior to July 1952, published as "at Koula, near Eleele." Records for August 1910 to December 1916 at site 0.5 mi upstream not equivalent owing to intervening inflow.

REVISED RECORDS.--WSP 740: 1931. WSP 1719: 1929-31(M). WSP 1937: 1918, 1919(M), 1920, 1921(M), 1927-28(M), 1930, 1936-37(M), 1941(P), 1943-46(P), 1947(M), 1948-52(P), 1955(M), 1956-57(P), 1958(M), 1960(M). WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 222 ft above mean sea level (by stadia survey). July 1, 1917, to Jan. 22, 1921, nonrecording gage and Dec. 16, 1926, to June 30, 1951, water-stage recorder, at same site at datum 1.00 ft higher.

REMARKS.--Records poor. Koula ditch diverts 3.0 mi above station for irrigation in vicinity of Makaweli. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--60 years (water years 1918-20, 1928-84), 86.0 ft³/s (62,310 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s Apr. 15, 1963, gage height, 14.87 ft, from rating curve extended above 7,600 ft³/s on basis of slope-area measurement of peak flow; minimum, 5.1 ft³/s May 21, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,600 ft³/s Mar. 1, gage height, 4.04 ft, no peak above base of 3,600 ft³/s; minimum, 12 ft³/s Sept. 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	208	28	24	21	160	56	42	33	15	17	13	14
2	68	30	24	21	110	133	14	46	15	17	13	14
3	87	34	24	21	44	19	15	19	15	16	15	14
4	60	28	24	21	35	19	15	21	15	16	30	14
5	46	27	24	21	32	16	15	17	15	17	16	14
6	34	28	30	20	30	15	17	16	15	15	14	13
7	33	27	25	20	31	15	17	16	16	15	14	13
8	68	27	24	20	34	15	14	17	15	15	14	13
9	34	27	25	20	35	15	30	18	22	15	15	13
10	131	27	25	21	31	15	191	15	25	17	16	13
11	43	27	25	20	29	15	270	15	56	17	17	18
12	72	34	27	21	28	15	48	15	70	15	18	17
13	80	178	27	24	28	15	25	15	77	15	23	16
14	51	30	25	22	42	15	31	15	17	18	19	16
15	39	25	26	20	55	15	16	16	16	17	17	26
16	32	24	25	20	72	15	15	15	73	16	15	22
17	34	24	22	54	67	15	20	15	236	16	15	63
18	30	25	28	71	44	15	51	28	34	18	14	34
19	29	138	26	92	34	17	44	15	22	18	14	21
20	271	184	21	57	35	16	38	19	20	17	13	18
21	140	103	20	52	38	15	137	15	32	19	13	18
22	59	51	20	51	31	15	45	15	42	17	14	30
23	53	34	19	135	35	15	54	16	22	16	80	19
24	38	30	20	351	33	15	22	16	22	16	19	18
25	34	28	27	113	18	15	19	16	19	15	16	19
26	108	27	22	106	18	15	19	16	23	15	49	110
27	40	26	20	80	17	15	24	15	26	15	16	22
28	31	26	22	49	17	15	17	15	18	14	15	17
29	30	26	21	47	17	17	16	15	18	14	15	16
30	36	24	20	58	---	15	17	15	17	14	15	15
31	29	---	20	54	---	19	---	15	---	13	14	---
TOTAL	2048	1347	732	1703	1200	642	1298	555	1028	495	591	670
MEAN	66.1	44.9	23.6	54..	41.4	20.7	43.3	17.9	34.3	16.0	19.1	22.3
MAX	271	184	30	351	160	133	270	46	236	19	80	110
MIN	29	24	19	20	17	15	14	15	15	13	13	13
AC-FT	4060	2670	1450	3380	2380	1270	2570	1100	2040	982	1170	1330

CAL YR 1983 TOTAL 20212 MEAN 55.4 MAX 702 MIN 17 AC-FT 40090
WTR YR 1984 TOTAL 12309 MEAN 33.6 MAX 351 MIN 13 AC-FT 24410

16060000 SOUTH FORK WAILUA RIVER NEAR LIHUE

LOCATION.--Lat 22°02'24", long 159°22'58", Hydrologic Unit 20070000, on right bank 0.2 mi upstream from Wailua Falls and 4.3 mi north of Lihue.

DRAINAGE AREA.--22.4 mi^2.

PERIOD OF RECORD.--December 1911 to April 1919, June 1919 to March 1921, May 1921 to June 1957, August, September 1957, November 1957 to February 1958, June 1958 to current year. Monthly discharge only for some periods, published in WSP 1319. Published as "above Waiehu Falls, near Lihue" 1912-13.

REVISED RECORDS.--WSP 1249: 1941-47(M), 1948-51(P). WSP 1719: 1943-49. WSP 1937: 1958-60.

GAGE.--Water-stage recorder. Altitude of gage is 240 ft, from topographic map. Prior to Nov. 18, 1918, at site 0.3 mi upstream at different datum. Nov. 18, 1918, to June 30, 1957, at site 10 ft downstream from present site at datum 2.50 ft higher and July 1, 1957, to June 23, 1958, at present datum.

REMARKS.--Records good. Lihue and Hanamaulu ditches divert upstream for irrigation of sugarcane in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--67 years (water years 1913-18, 1920, 1922-24, 1926-56, 1959-84), 116 ft^3/s (84,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,300 ft^3/s Apr. 15, 1963, gage height, 22.90 ft, from rating curve extended above 13,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 1.5 ft^3/s Aug. 21, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 736 ft^3/s Apr. 27, gage height, 6.22 ft, no peak above base of 5,800 ft^3/s; minimum, 1.5 ft^3/s Aug. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	8.3	5.3	3.8	35	5.1	14	12	6.6	4.2	2.4	2.8
2	88	7.7	9.7	3.5	106	115	6.8	6.9	6.4	3.5	2.4	3.0
3	65	7.7	10	3.8	9.7	11	4.2	8.8	6.6	3.1	2.4	3.5
4	55	7.7	10	4.0	5.6	4.2	3.8	10	6.0	3.1	3.3	4.0
5	36	7.4	10	8.9	4.5	3.8	3.3	13	6.4	4.5	8.0	3.0
6	22	7.4	9.4	8.0	4.0	3.3	3.5	12	6.9	4.0	6.3	2.4
7	8.8	7.2	8.6	4.9	5.9	3.0	4.3	10	6.2	3.6	3.5	3.1
8	25	14	8.6	4.3	16	3.0	5.3	8.8	6.9	3.3	2.6	3.8
9	13	15	8.3	4.2	10	3.0	5.6	8.8	7.4	3.8	2.3	3.8
10	83	14	8.6	4.2	8.3	3.0	75	8.3	20	3.8	2.3	4.3
11	26	14	8.6	3.8	8.8	2.8	102	6.9	24	7.8	3.0	6.2
12	13	28	7.4	4.0	11	3.0	21	6.4	35	8.5	3.0	7.2
13	26	223	9.4	7.5	6.6	3.0	14	6.9	97	11	2.8	6.9
14	75	26	8.6	14	7.2	2.8	45	8.0	12	6.5	4.0	4.9
15	126	14	6.9	6.4	14	2.8	10	8.3	7.7	4.0	3.8	4.2
16	100	12	6.6	5.1	61	3.1	6.2	8.8	6.9	7.6	2.6	4.7
17	58	11	5.8	69	31	3.1	6.2	8.0	116	6.7	2.3	4.7
18	9.1	11	5.1	84	8.3	3.0	9.4	7.4	20	3.6	2.6	8.8
19	7.4	71	5.8	62	5.6	3.5	27	9.4	10	3.6	2.6	30
20	173	151	5.3	11	4.7	7.5	56	8.0	6.9	3.6	2.3	10
21	76	97	4.9	6.9	4.7	3.8	103	8.3	6.0	9.3	1.8	5.8
22	29	23	4.7	6.2	4.7	3.0	79	7.2	8.6	7.2	1.8	4.2
23	19	9.4	4.9	19	4.7	2.8	69	9.7	6.6	4.2	2.2	5.1
24	12	6.9	4.7	165	6.6	3.1	37	14	4.9	3.6	42	5.3
25	10	7.2	5.6	60	6.6	3.1	19	17	4.5	3.3	8.6	4.7
26	14	7.2	7.7	25	11	12	26	8.3	4.2	3.0	23	164
27	23	6.2	5.1	12	5.8	13	269	7.4	4.7	3.1	9.4	36
28	10	6.0	4.7	18	5.3	3.1	62	7.4	5.1	2.6	4.2	9.4
29	8.8	5.6	4.9	18	5.8	4.2	30	7.4	4.0	2.4	3.5	6.9
30	8.8	5.6	4.9	30	---	5.1	20	6.9	4.2	8.1	3.0	6.2
31	8.6	---	9.9	12	---	4.3	---	6.6	---	6.9	2.8	---
TOTAL	1364.5	831.5	220.0	688.5	418.4	246.5	1136.6	276.9	467.7	153.5	166.8	368.9
MEAN	44.0	27.7	7.10	22.2	14.4	7.95	37.9	8.93	15.6	4.95	5.38	12.3
MAX	173	223	10	165	106	115	269	17	116	11	42	164
MIN	7.4	5.6	4.7	3.5	4.0	2.8	3.3	6.4	4.0	2.4	1.8	2.4
AC-FT	2710	1650	436	1370	830	489	2250	549	928	304	331	732

CAL YR 1983 TOTAL 13735.0 MEAN 37.6 MAX 433 MIN 3.8 AC-FT 27240
WTR YR 1984 TOTAL 6339.8 MEAN 17.3 MAX 269 MIN 1.8 AC-FT 12570

16061000 NORTH WAILUA DITCH NEAR LIHUE

LOCATION.--Lat 22°03'56", long 159°28'14", Hydrologic Unit 20070000, on left bank 300 ft downstream from intake, 7.9 mi west of Wailua House Lots, and 8.8 mi northwest of Lihue.

PERIOD OF RECORD.--July 1932 to current year.

REVISED RECORDS.--WSP 770: 1933.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,105.45 ft above mean sea level (levels by Lihue Plantation Co.).

REMARKS.--Records good. Ditch diverts from North Fork Wailua River for power and irrigation in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--52 years, 18.8 ft³/s (13,620 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 59 ft³/s Dec. 21, 1933, Apr. 24, 1934; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 53 ft³/s Nov. 20; minimum daily, 0.69 ft³/s Nov. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	20	18	16	34	21	22	16	17	19	16	16
2	28	21	18	16	28	24	18	16	16	18	16	17
3	28	22	18	16	24	21	18	16	18	18	18	15
4	28	22	18	20	22	20	18	16	18	18	20	15
5	26	20	18	26	20	18	16	16	8.9	20	20	15
6	24	20	17	19	20	18	20	16	8.5	18	17	15
7	25	10	17	18	22	18	21	16	17	16	16	19
8	28	.69	16	17	28	17	19	16	18	16	15	16
9	24	13	16	17	23	16	27	16	23	21	16	17
10	29	18	17	17	20	16	31	15	25	20	20	16
11	23	20	16	16	18	16	25	15	26	23	16	16
12	23	47	17	24	18	16	18	15	29	18	18	19
13	26	43	18	29	18	16	18	15	25	19	20	16
14	24	24	16	24	24	18	18	15	22	17	16	16
15	23	21	16	20	26	20	16	15	22	17	15	18
16	22	20	16	18	27	16	16	14	27	16	15	19
17	23	20	16	31	25	16	17	14	30	16	16	20
18	21	20	17	29	22	16	18	16	25	18	16	22
19	24	36	16	26	20	21	18	15	23	16	15	21
20	28	53	16	22	24	16	18	15	20	18	15	18
21	24	31	16	22	21	16	19	14	27	23	15	16
22	23	20	16	20	20	16	18	16	25	19	15	19
23	23	20	16	31	23	16	18	16	23	18	23	16
24	22	20	16	35	21	16	17	17	23	17	23	16
25	22	20	19	30	20	16	16	16	20	16	23	22
26	24	19	16	30	19	16	17	16	23	17	24	28
27	23	19	18	30	19	16	18	16	24	18	19	24
28	22	18	20	27	21	18	16	18	20	18	18	20
29	22	18	20	27	18	22	16	18	21	15	16	18
30	22	18	17	25	---	18	16	18	23	16	16	18
31	21	---	16	29	---	18	---	18	---	16	16	---
TOTAL	758	673.69	527	727	645	548	563	491	647.4	555	544	543
MEAN	24.5	22.5	17.0	23.5	22.2	17.7	18.8	15.8	21.6	17.9	17.5	18.1
MAX	33	53	20	35	34	24	31	18	30	23	24	28
MIN	21	.69	16	16	18	16	16	14	8.5	15	15	15
AC-FT	1500	1340	1050	1440	1280	1090	1120	974	1280	1100	1080	1080

CAL YR 1983 TOTAL 6958.41 MEAN 19.1 MAX 53 MIN .00 AC-FT 13800
WTR YR 1984 TOTAL 7222.09 MEAN 19.7 MAX 53 MIN .69 AC-FT 14330

16061200 NORTH WAILUA DITCH BELOW WAIKOKO STREAM, NEAR LIHUE

LOCATION.--Lat 22°03'34", long 159°28'00", Hydrologic Unit 20070000, on left bank 380 ft downstream from Waikoko Stream, 8.1 mi west of Wailua, and 8.4 mi northwest of Lihue.

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,070 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River and Waikoko Stream for power and irrigation in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 23.1 ft³/s (16,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 58 ft³/s Oct. 11, 1966; no flow Jan. 1-18, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 34 ft³/s Oct. 20, Nov. 20, June 12, 17; minimum daily, 2.6 ft³/s Nov. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	26	20	17	28	21	24	22	19	22	17	18
2	30	26	20	17	27	27	19	22	18	20	18	19
3	30	27	20	18	26	24	21	22	19	20	20	18
4	30	27	20	19	25	23	20	24	19	20	24	17
5	29	25	20	26	24	21	19	24	11	23	25	16
6	28	24	19	21	23	20	22	22	8.4	20	19	16
7	28	12	19	19	24	19	24	21	19	19	18	20
8	29	2.6	19	18	26	19	23	21	19	19	17	20
9	28	15	19	18	25	19	27	21	27	22	18	22
10	31	21	19	18	24	19	28	20	30	21	23	18
11	30	25	19	17	22	18	28	19	32	27	18	19
12	31	33	19	20	21	19	26	19	34	21	20	23
13	31	28	20	26	21	18	26	18	33	22	22	18
14	31	27	18	25	24	18	26	18	28	19	19	18
15	29	26	18	21	26	20	23	19	27	19	17	20
16	27	25	18	20	27	18	22	18	32	18	17	20
17	28	25	18	26	26	18	23	18	34	18	19	23
18	25	25	19	27	25	17	26	19	32	19	18	25
19	28	28	19	26	24	21	27	19	28	18	16	28
20	34	34	18	24	24	19	26	19	25	19	16	20
21	32	28	18	23	25	18	27	18	30	27	16	14
22	31	25	18	22	22	17	25	21	31	21	16	19
23	31	25	17	26	24	17	25	20	29	20	26	19
24	28	25	17	28	24	17	24	22	28	18	30	18
25	27	25	24	27	22	17	22	21	24	18	26	22
26	29	24	19	26	22	17	23	20	27	18	32	27
27	28	23	18	26	21	18	26	20	29	19	23	25
28	27	22	19	26	24	19	23	21	23	18	20	24
29	27	21	18	26	21	23	22	20	23	17	19	22
30	27	21	17	25	---	19	22	20	28	17	18	21
31	26	---	17	26	---	20	---	19	---	17	18	---
TOTAL	902	720.6	583	704	697	600	719	627	766.4	616	625	609
MEAN	29.1	24.0	18.8	22.7	24.0	19.4	24.0	20.2	25.5	19.9	20.2	20.3
MAX	34	34	24	28	28	27	28	24	34	27	32	28
MIN	25	2.6	17	17	21	17	19	18	8.4	17	16	14
AC-FT	1790	1430	1160	1400	1380	1190	1430	1240	1520	1220	1240	1210

CAL YR 1983	TOTAL	7858.1	MEAN	21.5	MAX	39	MIN	2.2	AC-FT	15590
WTR YR 1984	TOTAL	8169.0	MEAN	22.3	MAX	34	MIN	2.6	AC-FT	16200

16062000 STABLE STORM DITCH NEAR LIHUE

LOCATION.--Lat 22°04'09", long 159°26'46", Hydrologic Unit 20070000, on left bank 100 ft downstream from intake, 7.8 mi northwest of Lihue, and 7.9 mi west of Kapaa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 710 ft, by barometer.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River for irrigation of sugarcane in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--47 years (water years 1938-84), 10.8 ft³/s (7,820 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 71 ft³/s Apr. 3, 1948; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maxiumum daily discharge, 49 ft³/s Apr. 21; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	.00	22	18	.28	26	30	.28	21	20	24	23
2	40	.00	30	16	.12	31	26	24	20	19	24	24
3	20	.00	30	16	.12	25	25	34	20	19	29	23
4	.28	.00	30	21	.12	24	24	38	21	19	33	22
5	.28	.00	28	32	.12	23	23	36	22	20	31	21
6	.28	.00	28	24	16	22	27	32	23	18	25	21
7	.28	12	27	22	27	22	28	30	20	18	24	24
8	.28	28	26	21	30	22	26	33	19	18	24	22
9	.28	27	26	21	27	22	36	32	25	19	25	26
10	.20	26	28	20	26	22	43	28	26	20	30	22
11	.20	30	26	20	25	22	30	28	27	24	23	22
12	.20	36	26	24	25	22	33	27	30	20	28	26
13	.20	36	30	30	25	21	47	26	26	20	28	21
14	.20	32	25	28	28	21	45	26	23	19	20	22
15	.20	31	24	25	29	23	36	28	23	19	15	27
16	.20	30	23	23	30	21	36	28	28	18	15	28
17	.12	30	23	40	8.8	21	39	28	29	20	21	26
18	.05	30	24	38	.20	21	42	34	26	24	22	31
19	.05	34	24	32	.12	27	42	30	24	23	21	32
20	.05	38	22	28	.12	21	45	33	23	27	21	25
21	.05	14	24	26	.12	21	49	28	25	38	20	23
22	.02	.50	23	26	19	20	44	32	24	30	21	27
23	.02	.50	22	39	30	18	43	32	22	28	34	24
24	.00	.50	22	48	28	22	40	35	22	26	38	22
25	.00	.50	28	40	26	22	20	28	21	25	31	30
26	.00	.38	23	38	26	22	.38	26	22	25	38	46
27	.00	.38	22	36	25	25	.38	25	22	26	29	39
28	.00	.28	23	34	25	25	.28	23	20	27	25	34
29	.00	.28	22	33	24	32	.28	22	21	24	25	30
30	.00	.28	20	33	---	26	.28	21	22	24	23	28
31	.00	---	19	17	---	26	---	21	---	24	23	---
TOTAL	77.44	437.60	770	869	501.12	718	880.60	868.28	697	701	790	791
MEAN	2.50	14.6	24.8	28.0	17.3	23.2	29.4	28.0	23.2	22.6	25.5	26.4
MAX	40	38	30	48	30	32	49	38	30	38	38	46
MIN	.00	.00	19	16	.12	18	.28	.28	19	18	15	21
AC-FT	154	868	1530	1720	994	1420	1750	1720	1380	1390	1570	1570

CAL YR 1983 TOTAL 6018.42 MEAN 16.5 MAX 52 MIN .00 AC-FT 11940
WTR YR 1984 TOTAL 8101.04 MEAN 22.1 MAX 49 MIN .00 AC-FT 16070

16063000 NORTH FORK WAILUA RIVER AT ALTITUDE 650 FT, NEAR LIHUE

LOCATION.--Lat 22°04'02", long 159°26'21", Hydrologic Unit 20070000, on right bank 0.5 mi downstream from intake of Stable storm ditch and 7.6 mi northwest of Lihue.

DRAINAGE AREA.--5.29 mi².

PERIOD OF RECORD.--September 1914 to March 1915, May 1915 to October 1918, December 1918, March 1919, June 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 555: 1921. WSP 1569: 1915-27(M), 1943-47(M), 1948-56(P). WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 650 ft, from topographic map. Prior to Sept. 9, 1944, at datum 2.0 ft higher.

REMARKS.--Records fair. Since 1925, Hanalei tunnel (station 16100000) has diverted from Hanalei River basin into North Fork Wailua River above station; North Wailua and Stable storm ditches (station 16061000 and 160620000) divert water above station for power development and irrigation in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--68 years (water years 1916-18, 1920-84), 73.3 ft³/s (53,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 ft³/s Nov. 12, 1955, gage height, 13.53 ft, from rating curve extended above 2,300 ft³/s on basis of slope-area measurement at gage height 10.65 ft; minimum, 0.23 ft³/s June 5, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,480 ft³/s May 24, gage height, 7.04 ft, no peak above base of 2,800 ft³/s; minimum, 0.50 ft³/s Mar. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	43	12	1.7	198	6.5	13	55	1.9	1.8	1.9	1.5
2	30	45	3.5	3.6	71	29	4.8	27	1.9	1.3	2.1	1.6
3	35	47	3.2	3.8	41	3.5	4.6	12	2.0	1.3	6.6	1.6
4	40	46	2.4	8.8	34	3.6	4.0	22	1.9	1.3	10	1.7
5	30	40	1.7	30	33	2.7	3.2	15	4.1	2.2	7.4	1.6
6	24	38	1.5	4.2	16	2.4	5.7	9.5	8.3	.97	2.3	1.8
7	25	30	1.5	1.4	9.5	2.1	7.6	7.5	1.9	.78	1.9	2.3
8	41	23	1.5	1.2	38	1.9	4.8	10	1.8	.84	1.9	1.9
9	21	14	1.6	1.1	10	1.8	28	10	17	2.5	1.9	2.1
10	83	7.0	1.7	.97	5.8	1.8	59	6.2	16	2.4	6.0	1.8
11	34	5.2	1.4	.91	5.5	1.8	86	5.7	22	33	2.1	1.9
12	60	32	1.7	4.1	5.5	2.1	42	5.0	63	2.1	4.9	3.0
13	109	71	3.6	13	5.0	1.7	88	4.8	36	1.9	4.5	1.8
14	70	7.3	1.4	4.6	15	1.6	54	4.8	4.4	.97	5.6	1.9
15	55	5.0	1.3	1.6	23	2.6	17	4.4	4.0	.91	9.2	3.2
16	46	4.2	1.3	1.3	25	1.7	15	1.6	21	.84	9.5	4.2
17	59	3.6	1.3	40	29	1.6	19	1.3	86	2.0	6.0	4.3
18	44	3.5	1.6	14	32	1.5	29	7.3	11	2.5	2.3	18
19	91	43	2.0	6.8	32	5.4	30	2.8	5.7	.97	2.0	4.9
20	244	65	1.6	2.4	35	2.1	55	7.0	3.5	1.3	1.9	1.9
21	95	99	1.8	2.0	32	1.6	87	1.7	17	29	1.9	1.7
22	68	62	1.6	1.7	12	1.5	41	6.2	11	5.2	1.9	4.5
23	68	50	1.4	25	3.6	1.4	39	4.9	5.2	3.0	13	1.9
24	56	47	1.4	109	3.0	2.1	24	160	5.4	2.0	16	1.6
25	53	69	4.5	22	2.2	2.3	32	19	2.4	1.9	3.0	3.9
26	106	42	1.7	16	2.2	2.4	65	12	6.1	2.0	27	93
27	79	37	1.2	12	2.2	3.3	156	8.1	8.2	2.3	1.9	8.5
28	55	34	1.2	7.3	3.8	3.8	62	4.7	2.3	3.4	1.4	3.0
29	49	33	1.2	6.7	3.5	10	55	2.8	2.2	1.9	1.5	1.9
30	50	31	.97	8.1	---	5.2	52	2.1	4.8	1.9	1.4	1.3
31	45	---	1.0	22	---	5.1	---	1.9	---	1.9	1.5	---
TOTAL	1905	1076.8	65.77	377.28	728.8	116.1	1182.7	442.3	378.0	116.38	160.5	184.3
MEAN	61.5	35.9	2.12	12.2	25.1	3.75	39.4	14.3	12.6	3.75	5.18	6.14
MAX	244	99	12	109	198	29	156	160	86	33	27	93
MIN	21	3.5	.97	.91	2.2	1.4	3.2	1.3	1.8	.78	1.4	1.3
AC-FT	3780	2140	130	748	1450	230	2350	877	750	231	318	366

CAL YR 1983 TOTAL 14557.57 MEAN 39.9 MAX 477 MIN .97 AC-FT 28870
WTR YR 1984 TOTAL 6733.93 MEAN 18.4 MAX 244 MIN .78 AC-FT 13360

16068000 EAST BRANCH OF NORTH FORK WAILUA RIVER NEAR LIHUE

LOCATION.--Lat 22°04'19", long 159°25'05", Hydrologic Unit 20070000, on right bank 1,200 ft upstream from mouth and 7.2 mi northwest of Lihue.

DRAINAGE AREA.--6.27 mi².

PERIOD OF RECORD.--July 1912 to September 1914, December 1914 to March 1915, May 1915 to March 1919, June 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 770: 1932-33. WSP 1719: 1916. WSP 1937: 1918. WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 500 ft, from topographic map. Prior to Dec. 31, 1914, nonrecording gage at site 725 ft downstream at different datum. Dec. 31, 1914 to May 10, 1934, water-stage recorder at site 75 ft upstream at present datum.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1913-14, 1916-17, 1920-84), 48.2 ft³/s (34,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s Nov. 12, 1955, gage height, 14.7 ft, from floodmarks, from rating curve extended above 2,700 ft³/s; minimum, 6.8 ft³/s July 3, 13, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 452 ft³/s Apr. 27, gage height, 3.62 ft, no peak above base of 1,900 ft³/s; minimum, 9.1 ft³/s Aug. 21, 22, Sept. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	30	17	12	40	14	23	26	12	15	10	10
2	39	30	16	12	34	16	14	26	12	14	10	10
3	45	30	16	12	22	14	13	23	12	14	10	9.7
4	50	28	16	13	19	13	13	24	12	15	12	9.4
5	38	26	16	36	18	13	13	25	12	14	13	9.1
6	33	25	16	16	17	12	14	21	12	13	11	9.1
7	34	24	15	13	26	12	19	20	12	13	10	10
8	53	24	15	12	48	12	15	20	12	13	10	10
9	33	22	15	12	22	12	43	19	15	12	9.7	11
10	53	22	15	12	19	12	38	17	20	20	11	10
11	35	25	15	11	17	12	66	17	29	50	10	10
12	33	31	14	18	17	14	30	16	37	17	12	11
13	48	43	14	24	16	12	73	15	34	15	12	9.7
14	41	25	14	16	22	11	92	15	18	14	11	10
15	38	22	13	13	21	11	32	15	18	13	9.7	11
16	33	22	13	12	24	11	26	14	27	13	9.7	10
17	35	21	13	32	22	11	32	14	39	12	10	17
18	31	21	16	25	19	10	33	18	23	13	10	67
19	46	37	18	18	18	13	59	15	19	12	9.7	24
20	103	39	15	15	18	12	79	18	17	12	9.4	13
21	50	32	15	14	18	11	47	14	17	24	9.1	11
22	41	37	14	13	16	11	36	16	17	13	9.4	11
23	38	25	14	31	16	10	39	18	17	12	22	10
24	35	22	14	29	15	10	29	44	17	12	25	9.4
25	35	23	15	22	15	10	25	20	15	11	15	12
26	56	20	14	31	16	11	33	17	17	12	13	107
27	53	19	14	25	15	11	129	15	22	12	11	38
28	36	18	14	22	14	13	41	15	15	12	11	23
29	33	18	14	22	15	26	33	14	15	11	10	19
30	32	17	13	27	---	16	29	13	16	10	10	18
31	30	---	13	28	---	15	---	13	---	10	9.7	---
TOTAL	1316	778	456	598	599	391	1168	577	560	453	355.4	539.4
MEAN	42.5	25.9	14.7	19.3	20.7	12.6	38.9	18.6	18.7	14.6	11.5	18.0
MAX	103	43	18	36	48	26	129	44	39	50	25	107
MIN	30	17	13	11	14	10	13	13	12	10	9.1	9.1
AC-FT	2610	1540	904	1190	1190	776	2320	1140	1110	899	705	1070

CAL YR 1983 TOTAL 10590.4 MEAN 29.0 MAX 306 MIN 9.4 AC-FT 21010
WTR YR 1984 TOTAL 7790.8 MEAN 21.3 MAX 129 MIN 9.1 AC-FT 15450

16069000 WAILUA DITCH NEAR KAPAA

LOCATION.--Lat 22°04'34", long 159°24'04", Hydrologic Unit 20070000, on right bank 2,000 ft downstream from Wailua Reservoir, 5.2 mi west of Kapaa, and 7.0 mi north of Lihue.

PERIOD OF RECORD.--November 1936 to current year.

GAGE.--Water-stage recorder. Sharp-crested weir since Feb. 4, 1965. Datum of gage is 462.3 ft above mean sea level (by stadia survey).

REMARKS.--Records good. Ditch diverts water from North Fork Wailua River to reservoir, 2,000 ft above station and thence to fields for irrigation of sugarcane in vicinity of Kapaa. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--47 years (water years 1938-84), 15.5 ft³/s (11,230 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 63 ft³/s June 4, 1937; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 42 ft³/s Feb. 21; minimum daily, 7.3 ft³/s Feb. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	29	29	11	27	22	19	25	22	21	12	9.4
2	30	29	28	12	28	23	20	25	20	20	12	9.8
3	29	29	28	13	28	23	19	25	20	20	12	9.6
4	29	29	27	14	28	22	19	25	19	19	18	9.2
5	29	28	26	18	28	21	19	24	18	18	20	8.6
6	29	28	25	19	27	21	18	24	18	18	16	8.5
7	29	28	24	18	27	20	19	24	18	17	9.2	9.8
8	29	28	23	18	27	19	19	24	18	15	7.7	9.8
9	29	28	22	16	27	16	20	23	17	18	7.7	10
10	29	28	22	13	27	13	22	23	18	16	10	10
11	29	28	22	12	26	13	23	23	19	21	12	10
12	29	28	21	12	26	15	25	22	20	23	11	11
13	29	28	20	18	25	14	26	22	22	22	13	11
14	29	28	20	19	25	12	28	22	22	21	13	9.8
15	29	28	20	19	25	12	28	22	22	19	14	11
16	29	28	19	18	25	12	28	21	22	15	15	11
17	29	27	18	18	25	11	29	21	24	13	16	14
18	29	27	18	20	25	11	29	20	25	16	12	21
19	29	27	18	21	24	13	28	20	26	14	10	28
20	29	28	18	21	29	16	28	20	26	14	9.2	27
21	29	28	17	21	42	11	26	20	25	20	8.8	21
22	30	28	16	20	41	8.3	25	20	25	21	8.6	13
23	30	26	15	20	21	9.4	25	19	25	20	12	14
24	29	30	14	22	7.3	9.8	25	19	24	17	21	11
25	29	31	16	23	22	10	25	22	24	13	22	14
26	29	31	17	24	21	11	25	24	24	13	22	24
27	29	30	15	25	22	12	25	24	23	13	21	26
28	29	30	12	25	23	14	25	24	23	14	17	27
29	29	30	12	25	22	18	25	23	22	13	11	27
30	29	29	11	26	---	19	25	23	22	12	10	26
31	29	---	9.3	26	---	19	---	22	---	12	9.6	---
TOTAL	903	854	602.3	587	750.3	470.5	717	695	653	528	412.8	451.5
MEAN	29.1	28.5	19.4	18.9	25.9	15.2	23.9	22.4	21.8	17.0	13.3	15.1
MAX	30	31	29	26	42	23	29	25	26	23	22	28
MIN	29	26	9.3	11	7.3	8.3	18	19	17	12	7.7	8.5
AC-FT	1790	1690	1190	1160	1490	933	1420	1380	1300	1050	819	896

CAL YR 1983 TOTAL 8556.44 MEAN 23.4 MAX 32 MIN .00 AC-FT 16970
WTR YR 1984 TOTAL 7624.4 MEAN 20.8 MAX 42 MIN 7.3 AC-FT 15120

16071000 NORTH FORK WAILUA RIVER NEAR KAPAA

LOCATION.--Lat 22°03'08", long 159°22'22", Hydrologic Unit 20070000, on right bank 1.1 mi upstream from confluence with South Fork, 3.7 mi southwest of Kapaa, and 5.0 mi north of Lihue.

DRAINAGE AREA.--17.9 mi^2.

PERIOD OF RECORD.--July 1952 to current year.

REVISED RECORDS.--WSP 2137: Drainage area. WDR HI-75-1: 1974.

GAGE.--Water-stage recorder. Altitude of gage is 18 ft, from topographic map.

REMARKS.--Records good. Wailua ditch (station 16069000) diverts above station for irrigation of sugarcane in vicinities of Kapaa and Wailua. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--32 years, 126 ft^3/s (91,290 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,200 ft^3/s Nov. 12, 1955, gage height, 19.88 ft in gage well, 20.8 ft, from floodmarks, from rating curve extended above 3,700 ft^3/s on basis of slope-area measurement of peak flow; minimum, 2.1 ft^3/s Oct. 28, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 726 ft^3/s Apr. 27, gage height, 3.95 ft, no peak above base of 4,100 ft^3/s; minimum, 2.8 ft^3/s Sept. 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	59	27	8.0	124	6.8	13	62	5.5	6.1	3.5	3.7
2	79	60	9.4	7.9	98	18	6.8	57	6.1	5.5	3.7	3.7
3	70	63	8.7	7.2	49	6.4	5.6	30	5.9	5.5	3.4	3.7
4	116	56	8.0	7.7	41	5.6	5.0	36	5.6	5.7	4.4	3.7
5	65	51	8.0	45	37	5.3	5.0	32	5.3	5.3	5.0	3.4
6	51	47	7.7	13	30	5.0	5.0	25	5.2	5.3	4.0	3.4
7	47	41	7.6	6.4	16	5.0	5.3	20	5.0	5.2	6.1	5.4
8	83	25	7.2	5.7	76	5.0	6.8	21	5.0	5.3	6.1	4.4
9	46	23	7.2	5.6	25	5.6	22	23	11	5.6	6.1	4.0
10	116	13	7.4	5.5	18	5.0	60	16	13	5.5	6.1	4.0
11	60	11	7.3	5.3	13	5.0	100	14	18	56	6.1	5.0
12	79	20	7.2	5.5	10	5.0	40	12	42	11	5.7	4.7
13	123	90	7.2	15	9.8	5.6	79	11	59	5.7	5.4	4.0
14	99	19	6.4	12	20	5.6	136	9.9	8.8	5.2	5.0	3.7
15	87	12	6.3	9.5	23	5.6	30	9.7	5.3	5.0	5.4	3.7
16	70	9.4	6.4	6.2	39	6.0	20	9.5	11	4.9	5.7	3.4
17	79	8.6	6.4	34	33	5.6	26	8.5	78	4.6	6.1	4.0
18	63	7.9	6.1	24	37	5.0	42	13	14	4.8	5.7	14
19	80	34	7.0	17	34	6.0	63	9.5	9.1	5.0	5.4	20
20	288	91	5.5	7.1	36	8.0	154	14	5.0	5.0	4.7	5.0
21	135	82	5.3	6.2	36	8.0	112	8.4	5.0	26	4.7	3.7
22	97	81	5.3	5.9	26	11	63	7.3	14	6.7	4.7	3.1
23	94	56	5.3	13	7.4	7.2	76	13	7.6	4.6	8.2	2.8
24	79	51	5.5	82	6.9	6.8	46	63	6.9	4.2	17	3.1
25	77	70	6.2	27	6.3	6.8	39	29	7.2	4.0	5.7	3.4
26	118	47	6.2	20	5.8	7.6	69	11	7.0	3.9	15	102
27	122	40	6.1	10	6.1	6.4	287	7.5	12	4.2	5.7	19
28	77	37	9.4	9.3	6.8	6.4	100	5.6	7.9	4.3	4.0	9.0
29	70	36	9.3	5.8	7.2	10	79	5.6	6.3	3.9	3.7	4.0
30	69	34	8.9	11	---	7.2	70	5.0	6.5	4.2	3.7	3.4
31	59	---	8.3	9.6	---	6.0	---	5.4	---	3.7	3.7	---
TOTAL	2912	1274.9	239.8	447.4	877.3	208.5	1765.5	593.9	398.2	231.9	179.7	260.4
MEAN	93.9	42.5	7.74	14.4	30.3	6.73	58.9	19.2	13.3	7.48	5.80	8.68
MAX	288	91	27	82	124	18	287	63	78	56	17	102
MIN	46	7.9	5.3	5.3	5.8	5.0	5.0	5.0	5.0	3.7	3.4	2.8
AC-FT	5780	2530	476	887	1740	414	3500	1180	790	460	356	517

CAL YR 1983 TOTAL 19678.0 MEAN 53.9 MAX 589 MIN 5.3 AC-FT 39030
WTR YR 1984 TOTAL 9389.5 MEAN 25.7 MAX 288 MIN 2.8 AC-FT 18620

AVAILABLE

16071500 LEFT BRANCH OPAEKAA STREAM NEAR KAPAA

LOCATION.--Lat 22°04'43", long 159°23'55", Hydrologic Unit 20070000, on left bank 0.4 mi upstream from mouth, 0.6 mi northeast of Wailua Reservoir, and 4.9 mi west of Kapaa.

DRAINAGE AREA.--0.65 mi^2.

PERIOD OF RECORD.--May 1960 to current year. Prior to July 1960, published as Left Branch Opaikaa Stream near Kapaa.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 458.4 ft above mean sea level (by stadia survey).

REMARKS.--Records good. No diversion above station. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--24 years, 2.65 ft^3/s (1,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 724 ft^3/s Jan. 31, 1975, gage height, 5.58 ft, from rating curve extended above 415 ft^3/s on basis of slope-area measurement at gage height 5.01 ft; minimum, 0.09 ft^3/s Sept. 27-30, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14 ft^3/s Apr. 20, gage height 1.42 ft, no peak above base of 70 ft^3/s; minimum, 0.25 ft^3/s Sept. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.7	1.2	.75	.91	.75	.75	1.4	.75	.67	.41	.30
2	1.7	1.7	1.2	.67	1.0	.83	.53	1.4	.75	.67	.41	.35
3	1.6	1.6	1.3	.67	.67	.75	.47	1.3	.75	.67	.41	.35
4	2.1	1.6	1.2	.75	.67	.67	.47	1.2	.75	.60	.41	.35
5	2.1	1.6	1.2	1.0	.67	.67	.41	1.2	.75	.60	.41	.30
6	1.9	1.5	1.1	.75	.67	.67	.41	1.2	.75	.60	.41	.30
7	1.7	1.5	1.1	.75	1.1	.67	.53	1.1	.75	.53	.35	.35
8	1.8	1.4	1.1	.67	2.0	.60	.53	1.2	.83	.60	.30	.35
9	1.7	1.4	1.1	.67	1.1	.60	.67	1.1	.91	.60	.30	.47
10	2.1	1.4	1.1	.67	1.0	.60	.91	1.0	1.0	.67	.30	.41
11	1.9	1.4	1.1	.60	.91	.60	1.5	.91	.91	1.2	.30	.47
12	1.8	1.5	1.0	.67	.91	.67	1.0	.91	1.0	.83	.41	.47
13	2.1	1.5	1.0	1.0	.91	.67	.83	.91	1.1	.75	.35	.41
14	2.1	1.4	.91	.83	.91	.60	1.3	.91	.91	.75	.30	.41
15	2.0	1.3	.91	.67	.83	.60	.83	.91	.83	.67	.30	.41
16	1.9	1.2	.91	.67	.83	.60	.75	.91	1.0	.67	.35	.41
17	2.0	1.1	.91	1.1	.83	.60	.67	.91	1.0	.60	.35	.41
18	1.9	1.2	1.0	1.4	.83	.60	.67	1.1	.91	.60	.35	.60
19	1.8	1.6	1.1	1.1	.75	.67	1.7	.91	.91	.60	.30	.83
20	2.5	2.0	.91	.83	.75	.60	4.7	.91	.83	.60	.30	.53
21	2.0	1.6	.83	.75	.75	.60	1.6	.91	.75	.60	.30	.41
22	1.9	1.4	.83	.67	.75	.60	1.3	.91	.75	.60	.35	.41
23	1.8	1.4	.83	.67	.75	.53	1.2	.91	.75	.53	.47	.41
24	1.8	1.4	.83	.67	.75	.53	1.1	1.0	.75	.53	.53	.35
25	1.8	1.3	.75	.67	.75	.53	1.0	.91	.67	.53	.41	.41
26	1.9	1.3	.83	.67	.75	.53	1.1	.83	.67	.53	.41	2.6
27	1.9	1.3	.75	.67	.75	.53	3.8	.83	.75	.47	.41	.83
28	1.8	1.3	.75	.67	.75	.53	1.8	.83	.67	.41	.41	.53
29	1.7	1.3	.75	.67	.75	.53	1.6	.75	.67	.41	.35	.53
30	1.7	1.3	.75	.67	---	.47	1.5	.75	.67	.41	.30	.47
31	1.7	---	.75	.67	---	.41	---	.75	---	.41	.30	---
TOTAL	58.4	43.2	30.00	23.67	25.00	18.81	35.63	30.77	24.49	18.91	11.26	15.43
MEAN	1.88	1.44	.97	.76	.86	.61	1.19	.99	.82	.61	.36	.51
MAX	2.5	2.0	1.3	1.4	2.0	.83	4.7	1.4	1.1	1.2	.53	2.6
MIN	1.6	1.1	.75	.60	.67	.41	.41	.75	.67	.41	.30	.30
AC-FT	116	86	60	47	50	37	71	61	49	38	22	31

CAL YR 1983 TOTAL 523.06 MEAN 1.43 MAX 5.9 MIN .67 AC-FT 1040
WTR YR 1984 TOTAL 335.57 MEAN .92 MAX 4.7 MIN .30 AC-FT 666

16077000 MAKALEHA DITCH NEAR KEALIA

LOCATION.--Lat 22°07'06", long 159°22'04", Hydrologic Unit 20070000, on left bank at end of last tunnel from which flow enters Mimino Reservoir, 3.9 mi northwest of Kealia, and 4.0 mi northwest of Kapaa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 518 ft above mean sea level (by stadia survey).

REMARKS.--Records good. Ditch diverts from Makaleha Stream for irrigation of sugarcane in vicinity of Kealia. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--47 years (water years 1938-84), 6.82 ft^3/s (4,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 31 ft^3/s Aug. 1, 1961, June 30, 1982; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 20 ft^3/s Oct. 1, 20, Apr. 27; minimum daily, 1.8 ft^3/s Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	11	7.8	6.5	17	6.8	11	7.5	6.2	6.8	4.1	4.8
2	13	11	7.6	6.3	14	4.9	8.2	9.1	6.2	6.2	2.9	5.2
3	14	12	9.4	6.3	9.8	2.8	9.6	9.4	6.3	6.5	4.6	4.7
4	14	11	8.9	9.3	8.3	6.2	9.5	11	6.8	8.2	6.6	4.3
5	12	10	7.8	14	4.9	6.1	8.2	8.6	6.3	7.9	8.0	4.2
6	11	9.3	7.5	8.4	1.8	6.0	10	7.3	6.1	6.6	5.0	4.2
7	13	8.6	7.3	7.6	7.9	6.1	13	7.1	6.2	6.0	4.6	4.4
8	18	9.7	7.3	7.1	11	6.0	11	8.9	6.3	6.5	4.1	4.6
9	12	8.4	7.1	6.8	11	5.8	18	8.6	9.4	6.2	4.2	5.0
10	16	8.2	8.7	6.5	9.1	5.8	16	6.6	12	8.8	4.7	4.9
11	12	9.3	7.8	6.3	8.0	6.0	17	6.3	12	11	3.9	5.5
12	11	18	7.0	11	7.4	11	14	6.1	14	6.8	3.7	6.8
13	15	15	9.7	16	7.1	6.6	19	6.0	12	6.2	5.9	4.8
14	15	10	7.5	12	12	6.1	17	6.0	9.4	6.2	5.6	4.6
15	14	8.7	7.3	9.3	11	6.6	11	6.1	9.7	5.5	4.4	5.2
16	11	8.3	7.1	8.3	13	6.3	12	6.0	13	3.9	3.9	6.3
17	13	8.2	7.0	13	13	6.0	17	6.5	13	5.6	5.7	5.4
18	12	12	8.5	9.6	12	5.7	17	9.4	10	5.6	5.2	8.2
19	18	15	9.1	6.1	9.1	10	16	6.6	8.9	5.6	4.2	8.2
20	20	16	7.0	6.0	9.8	7.2	12	8.9	7.0	7.8	4.0	5.5
21	14	14	6.8	6.0	9.7	6.8	10	6.4	6.9	8.8	3.9	4.9
22	12	16	6.5	5.8	7.9	6.5	14	9.4	7.6	7.3	4.0	4.6
23	12	11	6.3	6.0	7.6	6.2	15	10	8.7	6.6	6.8	4.3
24	11	11	5.3	7.6	8.3	6.1	12	11	8.6	6.0	8.6	4.0
25	13	13	6.6	11	7.3	4.4	9.6	8.0	6.8	5.4	6.8	4.2
26	18	9.4	6.6	13	8.7	4.2	13	7.9	9.1	5.5	6.8	10
27	16	8.6	6.4	12	8.3	8.4	20	7.0	12	6.1	4.9	6.4
28	12	8.3	6.6	12	8.0	9.4	13	6.6	7.3	5.5	4.5	6.8
29	11	8.6	6.6	12	7.3	15	10	6.8	7.4	5.0	4.4	6.1
30	12	8.0	6.4	12	---	10	8.6	6.6	9.4	4.9	4.2	8.0
31	11	---	6.6	15	---	9.8	---	6.4	---	5.2	4.2	---
TOTAL	426	327.6	229.1	288.8	270.3	214.8	391.7	238.1	264.6	200.2	154.4	167.1
MEAN	13.7	10.9	7.39	9.32	9.32	6.93	13.1	7.68	8.82	6.46	4.98	5.57
MAX	20	18	9.7	16	17	15	20	11	14	11	8.6	10
MIN	11	8.0	6.3	5.8	1.8	2.8	8.2	6.0	6.1	3.9	2.9	4.0
AC-FT	845	650	454	573	536	426	777	472	525	397	306	331

CAL YR 1983 TOTAL 3801.68 MEAN 10.4 MAX 22 MIN .52 AC-FT 7540
WTR YR 1984 TOTAL 3172.7 MEAN 8.67 MAX 20 MIN 1.8 AC-FT 6290

16079000 KAPAHI DITCH NEAR KEALIA

LOCATION.--Lat 22°06'09", long 159°22'28", Hydrologic Unit 20070000, on right bank 500 ft downstream from intake and 4.0 mi west of Kealia.

PERIOD OF RECORD.--April 1909 to February 1911, May 1911, July 1911 to May 1914, July 1915 to April 1917, June 1917 to current year. Published as "at Kapahi, near Kapaa" prior to January 1914 and as "at Kapahi, near Kealia" January to December 1913.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 377.1 ft above mean sea level (by stadia survey). Prior to Nov. 26, 1936, at site 61 ft upstream at datum 2.52 ft higher.

REMARKS.--Records good. Ditch diverts from Kapaa Stream for irrigation of sugarcane in vicinity of Kapaa. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--66 years (water years 1918-20, 1922-84), 6.23 ft³/s (4,510 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 138 ft³/s Feb. 6, 1913; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 26 ft³/s Sept. 26; minimum daily, 0.10 ft³/s Oct. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	4.7	3.3	2.3	17	2.8	6.7	4.7	2.4	2.5	2.4	2.3
2	5.8	5.4	3.3	2.3	15	4.8	3.3	4.6	2.4	2.3	3.7	2.5
3	5.2	6.6	3.9	2.4	4.4	6.2	3.3	4.4	2.4	2.3	1.9	2.3
4	8.8	5.0	3.3	4.9	3.6	2.6	3.2	4.4	2.4	2.5	2.6	2.2
5	6.4	4.6	3.3	17	5.4	2.6	2.6	3.9	2.4	2.4	3.9	2.0
6	5.2	3.9	3.2	5.0	8.4	2.6	3.7	3.8	2.4	2.3	2.2	2.0
7	6.0	3.8	3.0	2.8	19	2.5	6.1	3.6	2.4	2.2	1.8	2.2
8	12	3.9	3.0	2.6	24	2.5	3.6	3.6	2.4	2.4	2.1	2.4
9	6.1	3.6	2.9	2.5	7.6	2.5	21	3.5	3.5	2.4	1.9	2.6
10	11	3.5	3.3	2.5	5.4	2.5	12	3.2	9.0	3.3	1.9	2.4
11	6.2	3.8	3.0	2.4	4.4	2.5	17	3.0	13	8.1	2.3	2.5
12	5.0	15	2.9	11	3.8	4.6	8.8	2.9	16	3.0	4.8	3.2
13	9.6	14	3.3	18	3.5	2.4	22	2.8	13	2.4	1.9	2.4
14	11	5.7	2.9	8.4	7.5	2.4	20	2.5	3.3	2.2	2.0	2.4
15	5.2	4.1	2.8	3.9	5.2	2.4	7.0	2.6	3.3	3.0	1.8	2.6
16	.38	3.8	2.8	3.0	5.7	2.3	5.4	2.5	5.8	4.6	2.0	2.6
17	3.5	3.6	2.8	12	5.6	2.3	9.8	2.5	12	2.0	3.0	2.3
18	5.9	9.0	4.9	11	4.2	2.3	11	3.3	4.2	2.2	2.5	9.7
19	11	13	5.9	8.6	3.2	4.3	16	2.6	3.3	2.0	2.3	4.2
20	5.3	17	2.9	6.2	3.2	2.6	21	3.3	2.7	2.3	2.2	2.2
21	.14	12	2.9	5.6	3.2	2.4	3.9	2.8	2.5	4.2	2.2	1.9
22	.10	10	2.9	5.6	2.9	2.4	3.8	3.2	2.5	2.3	2.3	1.8
23	.10	5.2	2.8	13	2.8	2.3	2.9	3.3	2.5	2.2	3.4	1.8
24	4.2	5.0	2.8	11	2.8	2.3	2.7	4.4	2.4	2.0	3.9	2.0
25	5.4	7.3	2.9	4.1	2.6	3.5	4.6	3.5	2.2	1.9	2.9	2.9
26	11	4.1	2.8	8.8	2.8	7.8	8.4	3.0	2.8	1.9	3.0	26
27	12	3.8	2.6	4.7	2.8	2.4	12	2.9	5.7	1.9	2.4	6.4
28	5.9	3.6	2.6	4.6	2.8	2.8	7.0	2.6	2.5	2.0	2.3	4.4
29	5.2	3.6	2.5	4.3	2.8	11	6.2	2.5	2.4	2.0	2.2	3.6
30	5.2	3.5	2.5	6.0	---	4.1	5.2	2.4	2.5	1.9	2.0	4.5
31	5.0	---	2.4	9.7	---	3.6	---	2.5	---	2.4	2.0	---
TOTAL	191.22	192.1	96.4	206.2	181.6	104.3	260.2	100.8	136.3	81.1	77.8	112.3
MEAN	6.17	6.40	3.11	6.65	6.26	3.36	8.67	3.25	4.54	2.62	2.51	3.74
MAX	12	17	5.9	18	24	11	22	4.7	16	8.1	4.8	26
MIN	.10	3.5	2.4	2.3	2.6	2.3	2.6	2.4	2.2	1.9	1.8	1.8
AC-FT	379	381	191	409	360	207	516	200	270	161	154	223

CAL YR 1983 TOTAL 1853.89 MEAN 5.08 MAX 17 MIN .03 AC-FT 3680
WTR YR 1984 TOTAL 1740.32 MEAN 4.75 MAX 26 MIN .10 AC-FT 3450

16080000 KAPAA STREAM AT KAPAHI DITCH INTAKE, NEAR KAPAA

LOCATION.--Lat 22°06'15", long 159°22'29", Hydrologic Unit 20070000, on right bank at Kapahi ditch intake, 3.8 mi northwest of Kapaa, and 4.3 mi northwest of Wailua.

DRAINAGE AREA.--3.86 mi².

PERIOD OF RECORD.--July 1936 to current year. Prior to July 1959, published as Kapaa River at Kapahi ditch intake, near Kapaa.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete-masonry control. Datum of gage is 381.8 ft above mean sea level (by stadia survey). Prior to July 1, 1962, at datum 0.07 ft higher.

REMARKS.--Records good. Entire low flow is diverted above station at times for irrigation of sugarcane. Records do not include flow of Kapahi ditch (sta 16079000).

AVERAGE DISCHARGE.--48 years, 20.2 ft³/s (14,630 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,670 ft³/s Jan. 25, 1956, gage height, 5.41 ft, present datum, from rating curve extended above 2,800 ft³/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 740 ft³/s Apr. 27, no peak above base of 1,900 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.00
2	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	2.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.35	.00	.00	4.2	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	18	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	41	.00	.00	.00	.00	.00	.00	.00
8	7.4	.00	.00	.00	18	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	7.0	.00	.00	.00	.00	.00
10	7.8	.00	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	6.1	.00	.17	.83	.00	.00
12	.00	6.7	.00	11	.00	.00	.00	.00	7.0	.00	.00	.00
13	3.4	6.7	.00	2.9	.00	.00	22	.00	.63	.00	.00	.00
14	.14	.00	.00	.00	.00	.00	9.6	.00	.00	.00	.00	.00
15	4.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	5.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	4.2	.00	.00	.86	.00	.00	.00	.00	4.4	.00	.00	.00
18	.00	13	2.0	.00	.00	.00	.00	.00	.00	.00	.00	2.8
19	7.8	20	.00	.00	.00	.00	6.5	.00	.00	.00	.00	.00
20	64	4.2	.00	.00	.00	.00	31	.00	.00	.00	.00	.00
21	17	.00	.00	.00	.00	.00	15	.00	.00	.00	.00	.00
22	12	1.2	.00	.00	.00	.00	5.6	.00	.00	.00	.00	.00
23	11	.00	.00	3.0	.00	.00	9.0	.00	.00	.00	.00	.00
24	2.5	.00	.00	.00	.00	.00	4.4	.00	.00	.00	.00	.00
25	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	11	.00	.00	.16	.00	.05	38	.00	.00	.00	.00	15
27	6.0	.00	.00	.00	.00	.00	80	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
30	.55	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	178.24	52.18	2.00	40.12	60.50	.65	238.20	.00	12.48	.83	.00	17.80
MEAN	5.75	1.74	.065	1.29	2.09	.021	7.94	.00	.42	.027	.00	.59
MAX	64	20	2.0	18	41	.60	80	.00	7.0	.83	.00	15
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	354	103	4.0	80	120	1.3	472	.00	25	1.6	.00	35

CAL YR 1983 TOTAL 2268.20 MEAN 6.21 MAX 252 MIN .00 AC-FT 4500
WTR YR 1984 TOTAL 603.00 MEAN 1.65 MAX 80 MIN .00 AC-FT 1200

16087000 ANAHOLA DITCH WASTEWAY NEAR KEALIA

LOCATION.--Lat 22°08'16", long 159°22'28", Hydrologic Unit 20070000, on right bank 300 ft downstream from wasteway gates on Anahola ditch, 500 ft north of Kaneha Reservoir, 3.8 mi west of Anahola, and 4.9 mi northwest of Kealia.

PERIOD OF RECORD.--July 1936 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 825 ft above mean sea level (by stadia survey).

REMARKS.--Records good. Water that passes station flows into Kaupaku Stream and thence into Anahola Stream 2 mi below gaging station 16089000 on Anahola Stream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--48 years, 4.23 ft³/s (3,060 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 84 ft³/s Nov. 12, 1955; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 0.76 ft³/s Sept. 16-18; no flow Feb. 10-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.08	.04	.04	.20	.08	.13	.08	.08	.08	.04	.08
2	.08	.08	.04	.08	.20	.08	.08	.13	.13	.08	.03	.08
3	.20	.08	.08	.08	.13	.08	.08	.13	.13	.08	.03	.08
4	.20	.08	.08	.21	.13	.13	.08	.20	.13	.13	.04	.30
5	.20	.08	.08	.08	.13	.13	.13	.20	.13	.13	.04	.58
6	.13	.08	.13	.02	.13	.13	.20	.20	.13	.13	.04	.42
7	.13	.08	.13	.02	.20	.13	.30	.30	.13	.13	.04	.58
8	.20	.04	.13	.08	.10	.13	.20	.30	.20	.13	.04	.42
9	.13	.04	.13	.20	.02	.20	.30	.30	.20	.13	.04	.42
10	.20	.04	.13	.20	.00	.20	.30	.30	.30	.20	.04	.13
11	.13	.08	.13	.20	.00	.30	.31	.30	.30	.13	.04	.20
12	.08	.13	.13	.42	.00	.30	.13	.30	.30	.02	.04	.30
13	.30	.08	.20	.30	.00	.13	.20	.30	.20	.01	.04	.20
14	.20	.04	.08	.20	.02	.13	.13	.30	.13	.03	.04	.30
15	.20	.04	.08	.20	.02	.13	.13	.30	.13	.08	.04	.58
16	.08	.04	.13	.20	.04	.20	.13	.30	.20	.08	.04	.76
17	.20	.04	.13	.30	.04	.20	.20	.30	.13	.08	.03	.76
18	.20	.13	.08	.08	.04	.20	.20	.30	.02	.08	.06	.76
19	.20	.13	.08	.13	.04	.30	.20	.20	.04	.08	.08	.20
20	.20	.08	.04	.13	.04	.13	.08	.20	.04	.08	.08	.13
21	.13	.04	.04	.13	.04	.08	.08	.20	.04	.08	.08	.08
22	.13	.04	.04	.13	.04	.08	.04	.42	.08	.08	.13	.08
23	.08	.04	.04	.20	.04	.04	.04	.20	.08	.08	.20	.08
24	.08	.04	.04	.20	.04	.04	.04	.15	.08	.08	.30	.08
25	.04	.08	.04	.20	.04	.04	.04	.04	.08	.08	.08	.13
26	.13	.04	.08	.30	.04	.08	.08	.04	.13	.08	.20	.13
27	.04	.04	.04	.13	.04	.08	.04	.04	.13	.08	.13	.08
28	.04	.04	.04	.13	.04	.13	.08	.04	.08	.08	.08	.08
29	.04	.04	.04	.08	.04	.20	.08	.08	.08	.08	.08	.08
30	.04	.04	.04	.20	---	.13	.08	.13	.08	.04	.08	.08
31	.04	---	.04	.20	---	.08	---	.13	---	.04	.08	---
TOTAL	4.18	1.91	2.53	5.07	1.84	4.29	4.11	6.41	3.91	2.69	2.31	8.18
MEAN	.13	.064	.082	.16	.063	.14	.14	.21	.13	.087	.075	.27
MAX	.30	.13	.20	.42	.20	.30	.31	.42	.30	.20	.30	.76
MIN	.04	.04	.04	.02	.00	.04	.04	.04	.02	.01	.03	.08
AC-FT	8.3	3.8	5.0	10	3.6	8.5	8.2	13	7.8	5.3	4.6	16

CAL YR 1983 TOTAL 128.14 MEAN .35 MAX 17 MIN .00 AC-FT 254
WTR YR 1984 TOTAL 47.43 MEAN .13 MAX .76 MIN .00 AC-FT 94

16088000 ANAHOLA DITCH ABOVE KANEHA RESERVOIR, NEAR KEALIA

LOCATION.--Lat 22°08'10", long 159°22'28", Hydrologic Unit 20070000, on left bank at point of discharge into Kaneha Reservoir, 500 ft below wasteway gates, and 4.8 mi northwest of Kealia.

PERIOD OF RECORD.--December 1921 to current year. Records for May 1915 to December 1921 at site 520 ft upstream not equivalent owing to intervening diversion.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 821.8 ft above mean sea level (Lihue Plantation bench mark). Dec. 9, 1921, to June 2, 1934, at site 480 ft upstream at different datum.

REMARKS.--Records fair. Ditch diverts water from Anahola Stream to Kaneha Reservoir, where it is stored for irrigation. Flood sometimes diverted above station by Anahola ditch wasteway (see sta 16087000). Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--60 years (water years, 1923-25, 1928-84), 4.20 ft³/s (3,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 62 ft³/s Nov. 12, 1947; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 25 ft³/s Oct. 20; minimum daily, 0.75 ft³/s Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	5.3	3.0	1.2	11	2.1	5.3	4.8	1.7	1.8	1.2	.91
2	7.2	6.1	2.8	1.2	10	2.4	3.1	4.6	1.7	1.5	1.3	1.6
3	11	7.0	3.6	1.2	4.5	2.1	3.4	4.3	1.7	1.5	1.2	1.1
4	6.6	5.2	5.2	9.2	3.4	3.3	2.6	5.5	1.7	3.0	2.0	.91
5	5.9	4.5	2.8	19	3.3	2.1	2.6	4.8	1.5	5.2	1.6	.83
6	5.0	4.0	2.5	4.5	3.4	2.0	4.4	3.3	1.5	1.8	1.2	.83
7	6.1	3.6	2.2	2.8	17	1.7	6.0	3.0	1.4	1.5	.99	1.6
8	15	3.8	2.1	2.4	14	1.7	4.5	3.3	1.4	1.6	.91	1.4
9	6.1	3.3	2.1	2.1	7.9	1.6	7.2	3.3	2.1	1.5	.91	4.7
10	15	3.6	2.4	2.0	5.7	1.6	7.5	2.5	5.9	7.6	1.5	1.8
11	6.6	4.1	2.2	1.8	4.5	4.5	11	2.4	9.6	11	1.2	4.1
12	6.2	12	1.8	6.5	3.8	5.0	9.8	2.1	8.5	3.3	2.2	3.5
13	17	11	4.8	8.8	3.4	3.1	19	2.0	7.9	2.4	1.8	1.3
14	12	4.5	2.2	5.4	6.9	2.4	11	1.8	3.0	2.1	1.8	.91
15	11	3.6	1.8	3.0	5.7	2.0	5.7	2.2	2.2	2.6	.94	.91
16	6.6	3.3	1.7	2.4	9.5	1.7	4.8	2.0	6.0	2.1	.83	.83
17	10	3.1	1.6	7.2	7.2	1.7	7.1	1.8	11	2.0	2.9	.75
18	8.0	9.4	2.4	4.1	6.2	1.6	11	7.6	3.6	1.8	2.2	5.1
19	17	14	4.8	2.5	5.4	4.3	14	2.5	3.4	1.7	1.3	4.4
20	25	14	1.8	2.1	5.2	2.5	18	4.0	2.4	4.9	.91	1.2
21	16	8.3	3.7	2.0	4.5	3.0	12	2.2	2.1	3.3	.99	.99
22	9.5	7.4	2.2	2.0	3.4	2.1	8.1	4.3	2.1	2.1	.91	.91
23	9.1	5.2	1.7	4.1	3.1	1.6	7.8	3.6	2.1	1.6	2.3	.91
24	8.1	4.7	1.5	4.6	3.1	1.5	5.7	8.5	2.0	1.5	6.0	.91
25	6.8	7.1	1.7	3.6	3.4	1.4	4.6	4.2	1.7	1.4	2.0	1.2
26	14	4.3	1.6	3.9	3.8	1.5	11	3.0	3.0	1.7	3.3	14
27	9.6	3.6	1.5	4.0	3.8	1.7	18	2.4	5.3	2.6	1.5	3.6
28	7.0	3.4	1.5	4.7	2.6	3.3	8.9	2.2	2.0	1.7	1.1	3.7
29	6.2	4.3	1.4	3.7	2.2	8.2	6.8	3.0	2.1	1.4	1.1	5.7
30	7.0	3.4	1.4	7.1	---	5.6	5.5	2.4	2.6	1.3	.99	2.8
31	5.5	---	1.3	11	---	2.6	---	1.8	---	1.3	.91	---
TOTAL	308.1	177.1	73.3	140.1	167.9	85.9	246.4	105.4	103.2	81.0	49.99	73.60
MEAN	9.94	5.90	2.36	4.52	5.79	2.77	8.21	3.40	3.44	2.61	1.61	2.45
MAX	25	14	5.2	19	17	9.0	19	8.5	11	11	6.0	14
MIN	5.0	3.1	1.3	1.2	2.2	1.4	2.6	1.8	1.4	1.3	.83	.75
AC-FT	611	351	145	278	333	170	489	209	205	161	99	146

CAL YR 1983 TOTAL 1949.82 MEAN 5.34 MAX 25 MIN .02 AC-FT 3870
WTR YR 1984 TOTAL 1611.99 MEAN 4.40 MAX 25 MIN .75 AC-FT 3200

16089000 ANAHOLA STREAM NEAR KEALIA

LOCATION.--Lat 22°09'05", long 159°21'17", Hydrologic Unit 20070000, on right bank at intake of Lower Anahola ditch and 4.7 mi northwest of Kealia.

DRAINAGE AREA.--4.27 mi².

PERIOD OF RECORD.--August to December 1910, January 1913 to November 1918, January 1919, March 1919 to current year. Monthly discharge only for some periods, published in WSP 1319. Published as Anahola River above dam at Kiokala, near Kealia prior to July 1913 and as Anahola River near Kealia July 1913 to June 1958.

REVISED RECORDS.--WSP 1719: 1915, 1916-18(M). WSP 2137: 1965(P), drainage area.

GAGE.--Water-stage recorder and combination concrete dam and orifice control. Datum of gage is 295.11 ft above mean sea level (Highway Department bench mark). Prior to May 4, 1934, at site 0.1 mi upstream at different datum.

REMARKS.--Records fair. Records include flow in Lower Anahola ditch (see sta 160 1000). Anahola ditch (see 16088000) diverts 3 mi above station for irrigation in vicinity of Kealia. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1914-17, 1920-84), 22.6 ft³/s (16,370 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s Jan. 25, 1956, gage height, 14.6 ft from floodmarks, from rating curve extended above 590 ft³/s; minimum, 1.5 ft³/s Sept. 6, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s Apr. 19, gage height, 4.44 ft, from rating curve extended above 410 ft³/s on basis of slope-area measurement at gage height 10.6 ft, no peak above base of 2,200 ft³/s; minimum, 1.5 ft³/s on Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.2	5.1	3.9	14	4.8	8.5	7.2	3.6	4.4	2.2	1.6
2	9.6	7.2	5.1	3.6	[illegible]	4.8	3.9	7.2	3.5	4.2	2.2	2.1
3	13	7.7	6.0	3.6	8.6	4.8	3.9	6.8	3.6	4.2	2.1	2.0
4	9.6	7.2	5.4	23	6.8	5.4	3.6	6.8	3.5	4.4	2.4	1.7
5	8.6	6.3	5.1	52	6.3	4.8	3.6	6.3	3.4	5.7	2.4	1.6
6	7.7	6.3	4.8	9.1	6.3	4.5	7.7	6.3	3.4	3.7	2.2	1.6
7	7.7	6.0	4.8	6.3	147	4.5	11	6.0	3.3	3.6	2.1	2.2
8	22	6.3	4.8	6.0	45	4.5	4.5	5.4	3.3	3.6	2.0	2.1
9	8.6	6.0	4.8	5.7	11	4.2	11	5.4	3.9	3.5	2.0	2.7
10	21	6.3	4.8	5.7	8.2	3.9	12	4.8	5.8	20	2.1	2.6
11	8.6	6.0	4.8	5.4	7.2	16	13	4.8	6.9	30	2.1	3.9
12	7.2	12	4.8	8.4	6.8	32	6.5	4.8	12	10	2.5	2.6
13	35	11	7.2	12	6.3	3.9	17	4.5	15	6.0	2.9	2.2
14	15	6.8	4.8	11	10	3.6	11	4.5	4.6	5.0	2.8	2.1
15	13	6.0	4.8	7.7	6.8	3.6	4.5	4.5	3.9	6.0	2.3	3.2
16	10	6.0	4.5	6.3	14	3.3	3.9	4.5	5.5	5.0	2.2	2.4
17	11	5.4	4.5	9.6	9.1	3.1	5.1	4.5	18	4.0	3.8	2.1
18	9.6	49	4.5	8.2	7.7	3.1	7.7	6.8	5.4	3.8	4.0	2.9
19	15	41	7.7	7.2	6.3	5.1	136	5.1	4.4	3.6	2.9	6.7
20	88	17	4.5	6.8	6.3	4.2	74	5.1	4.2	6.0	2.5	2.7
21	24	8.2	5.4	6.3	5.4	3.9	14	4.5	4.1	5.0	2.5	2.1
22	17	7.7	4.5	6.0	5.4	3.9	8.2	4.8	4.1	4.0	2.6	1.8
23	16	6.3	4.2	6.3	5.1	3.3	7.2	5.1	4.2	3.8	3.3	1.7
24	15	6.3	3.9	8.6	4.8	3.3	6.8	15	4.2	3.5	6.1	1.6
25	13	6.3	4.2	6.3	4.8	3.3	6.3	6.0	4.1	3.5	4.9	2.6
26	21	6.0	4.2	6.0	5.1	3.6	57	4.8	4.2	3.3	3.9	59
27	16	5.4	3.9	6.0	5.4	3.9	159	4.2	4.8	3.5	3.5	6.2
28	13	5.4	3.9	6.8	5.1	3.9	13	3.9	4.4	3.3	2.6	3.9
29	11	5.1	3.9	6.0	4.8	14	8.6	3.9	4.2	3.0	1.9	5.2
30	11	5.1	3.9	9.1	---	6.3	7.7	4.2	4.5	2.6	1.7	3.3
31	8.6	---	3.9	12	---	3.9	---	3.9	---	2.4	1.6	---
TOTAL	497.8	288.5	148.7	280.9	399.6	177.4	636.2	171.6	160.0	174.6	84.3	138.4
MEAN	16.1	9.62	4.80	9.06	13.8	5.72	21.2	5.54	5.33	5.63	2.72	4.61
MAX	88	49	7.7	52	147	32	159	15	18	30	6.1	59
MIN	7.2	5.1	3.9	3.6	4.	3.1	3.6	3.9	3.3	2.4	1.6	1.6
AC-FT	987	572	295	557	793	352	1260	340	317	346	167	275

CAL YR 1983 TOTAL 4321.5 MEAN 11.8 MAX 281 MIN 3.3 AC-FT 8570
WTR YR 1984 TOTAL 3158.0 MEAN 8.63 MAX 159 MIN 1.6 AC-FT 6260

16097500 HALAULANI STREAM AT ALTITUDE 400 FT, NEAR KILAUEA

LOCATION.--Lat 22°10'54", long 159°25'17", Hydrologic Unit 20070000, on left bank 0.5 mi upstream from confluence with Pohakuhonu Stream and 2.3 mi south of Kilauea.

DRAINAGE AREA.--1.9 mi^2.

PERIOD OF RECORD.--November 1957 to current year.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 391.8 ft above mean sea level (by stadia survey).

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--26 years (water years 1959-84), 11.5 ft^3/s (8,330 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,070 ft^3/s Aug. 6, 1959, gage height, 8.30 ft, from rating curve extended above 190 ft^3/s on basis of slope-area measurement of peak flow; minimum, 1.8 ft^3/s Sept. 6-8, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 434 ft^3/s May 24, gage height, 4.04 ft, no peak above base of 580 ft^3/s; minimum, 3.6 ft^3/s Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	7.2	5.9	4.9	13	5.1	7.8	6.8	4.9	4.9	4.2	3.9
2	10	7.2	5.8	4.9	13	5.3	5.2	6.6	4.8	4.9	4.1	4.1
3	14	7.5	6.0	4.9	7.5	5.0	5.4	6.8	4.8	5.0	4.2	3.8
4	9.8	6.9	6.2	9.0	6.5	5.3	5.1	6.3	4.7	5.4	4.3	3.8
5	9.9	6.7	5.7	20	6.1	4.9	4.9	6.0	4.7	5.4	4.1	3.8
6	8.6	6.7	5.7	6.2	5.9	4.9	6.5	5.8	4.6	4.7	4.0	3.8
7	8.3	6.4	5.6	5.4	33	4.8	7.3	5.6	4.6	4.6	4.0	4.0
8	16	6.5	5.5	5.1	24	4.8	6.0	5.6	4.6	4.6	4.0	3.9
9	8.7	6.2	5.5	5.0	8.9	4.7	8.1	5.5	5.0	4.6	4.0	3.9
10	9.9	6.2	5.5	5.0	7.3	4.6	10	5.3	5.7	16	4.2	3.9
11	8.2	6.2	5.4	4.9	6.6	5.5	14	5.1	6.6	9.2	4.0	4.0
12	8.4	12	5.4	6.3	6.2	11	10	5.1	10	5.5	4.3	4.3
13	17	12	6.0	7.2	5.9	5.3	19	5.0	9.4	5.0	4.3	3.8
14	12	7.2	5.4	5.5	7.6	4.9	10	4.9	5.5	4.9	4.2	3.9
15	10	6.6	5.3	5.3	7.0	4.9	7.3	5.1	5.3	4.7	4.0	3.9
16	8.7	6.3	5.3	5.1	12	4.7	6.8	4.9	9.6	4.6	3.9	3.8
17	11	6.2	5.3	6.3	11	4.7	8.0	5.0	16	4.6	4.5	3.8
18	8.5	7.8	5.8	5.5	8.0	4.6	10	5.6	7.2	4.7	4.1	4.4
19	14	17	5.9	5.2	6.9	5.3	30	4.9	6.1	4.5	3.9	4.6
20	37	15	5.3	5.0	6.7	4.8	25	5.0	5.7	4.7	3.9	3.9
21	17	9.3	5.7	5.0	6.5	4.6	12	4.8	5.7	4.6	3.9	3.8
22	11	8.1	5.3	4.9	5.9	4.6	9.3	5.5	5.3	4.5	3.9	3.7
23	10	7.3	5.2	9.0	5.9	4.6	9.1	5.3	5.4	4.4	4.1	3.7
24	8.9	6.9	5.1	6.8	5.7	4.5	7.6	46	5.5	4.4	4.6	3.7
25	8.3	6.9	5.2	5.7	5.6	4.5	7.0	8.2	5.1	4.4	4.4	4.2
26	11	6.6	5.1	6.1	5.5	4.5	43	6.0	5.6	4.5	4.1	27
27	8.3	6.3	5.1	5.9	6.1	4.5	45	5.5	5.4	4.6	3.9	6.1
28	7.7	6.2	5.2	6.0	5.5	4.5	11	5.3	5.0	4.5	4.0	4.8
29	7.4	6.1	5.1	5.6	5.3	7.9	8.4	5.4	5.1	4.3	3.9	4.4
30	8.1	6.0	5.0	6.1	---	6.1	7.4	5.1	5.0	4.3	3.9	4.3
31	7.1	---	5.0	13	---	5.1	---	4.9	---	4.2	3.9	---
TOTAL	351.8	233.5	169.5	200.8	255.1	160.5	366.2	212.9	182.9	161.2	126.8	145.0
MEAN	11.3	7.78	5.47	6.48	8.80	5.18	12.2	6.87	6.10	5.20	4.09	4.83
MAX	37	17	6.2	20	33	11	45	46	16	16	4.6	27
MIN	7.1	6.0	5.0	4.9	5.3	4.5	4.9	4.8	4.6	4.2	3.9	3.7
AC-FT	698	463	336	398	506	318	726	422	363	320	252	288

CAL YR 1983 TOTAL 3315.8 MEAN 9.08 MAX 90 MIN 4.6 AC-FT 6580
WTR YR 1984 TOTAL 2566.2 MEAN 7.01 MAX 46 MIN 3.7 AC-FT 5090

16100000 HANALEI TUNNEL OUTLET NEAR LIHUE

LOCATION.--Lat 22°05'03", long 159°27'51", Hydrologic Unit 20070000, on left bank at outlet of Hanalei tunnel, 2.2 mi downstream from intake on Kaapoko Stream, and 9.4 mi northwest of Lihue.

PERIOD OF RECORD.--July 1932 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,210 ft, from tunnel profile.

REMARKS.--Records good. Tunnel diverts water from Kaapoko Stream and Hanalei River into North Branch of North Fork Wailua River, from which it is later diverted for irrigation in vicinity of Lihue and Kapaa. Prior to Feb. 24, 1976, records do not include water by-passing at times above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--52 years, 27.0 ft³/s (19,560 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 99 ft³/s Apr. 11, 25, 26, 1942; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 50 ft³/s Oct. 20; minimum daily, 2.8 ft³/s Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	30	21	16	42	23	31	30	14	14	21	20
2	34	30	21	16	34	27	27	30	14	14	21	20
3	34	32	22	16	28	22	26	27	14	14	27	20
4	20	30	22	23	26	22	25	35	14	14	29	20
5	4.0	28	20	36	25	20	23	28	14	16	26	18
6	3.0	28	20	20	24	20	29	25	14	14	21	18
7	3.2	26	20	18	28	20	31	24	14	14	20	20
8	6.4	26	20	18	36	20	28	29	14	14	20	20
9	2.8	26	20	18	26	20	40	26	21	15	20	22
10	5.3	26	20	16	24	20	45	23	20	15	27	20
11	11	27	20	16	23	20	45	23	23	22	20	20
12	33	40	20	8.4	23	20	38	22	30	15	29	20
13	40	43	23	20	23	19	44	22	23	15	28	18
14	37	30	20	23	28	20	42	22	16	14	22	20
15	33	28	19	20	33	20	35	23	16	15	20	25
16	30	27	19	20	34	18	35	22	25	14	20	23
17	33	26	18	34	27	18	38	22	30	19	22	20
18	29	26	20	32	25	18	41	29	18	22	20	27
19	40	33	19	25	26	24	39	27	16	21	20	23
20	50	42	18	21	27	18	42	28	16	25	20	20
21	41	38	20	21	24	18	45	23	21	37	20	19
22	35	28	18	21	22	18	42	27	18	27	20	24
23	35	27	18	33	25	16	40	29	17	24	33	20
24	33	26	18	47	23	20	36	30	16	23	32	20
25	33	30	23	34	22	20	31	20	15	22	27	25
26	41	24	20	33	22	21	33	18	18	21	34	37
27	35	23	18	30	21	26	41	16	18	23	25	30
28	32	23	18	27	22	26	31	15	15	25	22	27
29	31	22	18	28	20	35	30	15	15	20	22	25
30	31	21	16	28	---	27	29	14	17	20	20	23
31	30	---	16	32	---	26	---	14	---	21	20	---
TOTAL	870.7	866	605	750.4	763	662	1062	738	536	589	728	664
MEAN	28.1	28.9	19.5	24.2	26.3	21.4	35.4	23.8	17.9	19.0	23.5	22.1
MAX	50	43	23	47	42	35	45	35	30	37	34	37
MIN	2.8	21	16	8.4	20	16	23	14	14	14	20	18
AC-FT	1730	1720	1200	1490	1510	1310	2110	1460	1060	1170	1440	1320

CAL YR 1983 TOTAL 8976.88 MEAN 24.6 MAX 57 MIN .38 AC-FT 17810
WTR YR 1984 TOTAL 8834.1 MEAN 24.1 MAX 50 MIN 2.8 AC-FT 17520

AVAILABLE

16103000 HANALEI RIVER NEAR HANALEI

LOCATION.--Lat 22°11'31", long 159°27'57", Hydrologic Unit 20070000, on right bank 2.6 mi southeast of Hanalei School and 4.9 mi upstream from mouth.

DRAINAGE AREA.--19.1 mi².

PERIOD OF RECORD.--January 1912 to November 1919, annual maximum, water years 1962-63, December 1962 to current year.

REVISED RECORDS.--WSP 1937: Drainage area. WSP 2137: 1962(M), 1963-65(P). WDR HI-77-1: 1970-76(M), 1975-76.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 35.8 ft above mean sea level (by stadia survey). Jan. 1, 1912 to Nov. 20, 1919, nonrecording gage at site 0.2 mi upstream at different datum. Jan. 26 to Dec. 26, 1962, crest-stage gage at present site and datum.

REMARKS.--Records fair except for periods of no gage-height record, which are poor. Since 1925, Hanalei tunnel (sta 16100000) has diverted from Hanalei River and its tributary Kaapoko Stream above station to North Branch of North Fork Wailua River for irrigation. China ditch above station diverts for irrigation of taro in vicinity of Hanalei. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since diversion to Hanalei tunnel).--21 years (water years 1964-84), 217 ft³/s (157,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s Apr. 19, 1974, gage height, 14.28 ft, from rating curve extended above 9,600 ft³/s; minimum, 31 ft³/s Sept. 30, Oct. 1, 2, 5, 12, 13, Nov. 3, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,820 ft³/s Apr. 27, gage height, 6.44 ft, no peak above base of 9,200 ft³/s; minimum, 35 ft³/s Sept. 5, 6, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	93	62	52	232	56	172	91	65	61	46	38
2	177	92	61	51	195	82	80	84	64	59	46	38
3	183	91	60	51	102	58	70	86	64	60	48	37
4	155	80	60	81	85	61	63	78	63	64	72	36
5	137	76	59	196	80	55	60	70	62	63	54	36
6	120	72	58	84	77	54	84	68	62	56	47	36
7	120	70	58	62	90	54	106	66	60	54	46	41
8	274	68	57	57	157	53	86	67	60	54	44	38
9	128	65	57	54	94	51	225	66	66	54	44	49
10	225	64	58	54	75	50	342	61	72	250	50	43
11	128	68	58	52	70	54	455	58	90	100	46	50
12	103	122	58	67	67	84	193	58	200	66	52	43
13	205	233	66	98	63	53	480	57	140	60	77	38
14	132	91	58	72	82	50	401	56	77	56	56	37
15	119	72	56	58	96	49	141	58	77	55	47	40
16	91	66	55	54	129	48	113	57	160	55	46	41
17	109	64	54	143	97	47	123	58	250	55	54	38
18	88	62	99	103	74	47	161	93	90	56	50	115
19	332	178	93	77	72	58	155	58	70	52	46	63
20	821	216	58	65	82	52	202	68	65	55	46	41
21	275	164	58	60	80	48	232	58	66	54	44	38
22	169	107	57	58	67	48	154	63	64	54	43	42
23	143	85	54	109	67	49	210	70	66	53	151	43
24	117	79	54	327	62	44	143	200	68	53	115	36
25	109	84	61	130	60	43	106	94	65	50	64	45
26	311	72	55	146	61	43	212	84	70	50	96	290
27	192	68	53	109	64	49	801	79	66	54	52	77
28	120	66	53	99	61	62	165	74	64	50	49	54
29	106	67	53	90	57	203	120	73	62	47	48	52
30	110	64	52	126	---	106	103	70	62	46	46	48
31	96	---	52	133	---	79	---	66	---	46	42	---
TOTAL	5800	2799	1847	2918	2598	1890	5958	2279	2510	1942	1767	1623
MEAN	187	93.3	59.6	94.1	89.6	61.0	199	73.5	83.7	62.6	57.0	54.1
MAX	821	233	99	327	232	203	801	200	250	250	151	290
MIN	88	62	52	51	57	43	60	56	60	46	42	36
AC-FT	11500	5550	3660	5790	5150	3750	11820	4520	4980	3850	3500	3220

CAL YR 1983	TOTAL	49209	MEAN	135	MAX	1470	MIN	47	AC-FT	97610
WTR YR 1984	TOTAL	33931	MEAN	92.7	MAX	821	MIN	36	AC-FT	67300

NOTE.--No gage-height record May 2-6, 23-26, June 9 to July 24.

AVAILABLE

16108000 WAINIHA RIVER NEAR HANALEI

LOCATION.--Lat 22°08'20", long 159°33'38", Hydrologic Unit 20070000, on left bank at Puwainui Falls, 1.5 mi upstream from Wainiha powerplant intake, and 6.0 mi southwest of Hanalei.

DRAINAGE AREA.--10.2 mi².

PERIOD OF RECORD.--August 1952 to February 1956, October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 960 ft, from topographic map.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years (water years 1953-55, 1959-84), 140 ft³/s (101,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,100 ft³/s Apr. 19, 1974, gage height, 9.47 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 7.72 ft; minimum, 33 ft³/s Feb. 11, 12, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 17, 1956, which destroyed the station, reached a stage of 14.1 ft, from floodmarks, discharge, about 40,000 ft³/s, from unit-discharge study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,160 ft³/s Oct. 20, gage height, 4.57 ft; no peak above base of 3,600 ft³/s; minimum, 34 ft³/s Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	442	86	52	46	303	82	161	73	43	51	46	43
2	126	90	52	46	115	118	94	84	43	45	46	42
3	134	99	51	46	72	56	90	69	51	47	134	42
4	94	72	52	78	63	72	76	99	50	59	122	41
5	74	62	50	173	60	50	62	60	48	66	67	37
6	64	63	50	72	61	46	112	50	49	48	47	34
7	78	58	49	56	66	44	120	46	61	42	42	50
8	197	56	49	51	86	43	91	68	55	42	40	46
9	81	55	49	49	75	43	239	63	131	47	45	55
10	253	53	50	48	58	42	409	45	95	45	78	49
11	91	59	50	47	51	42	414	43	174	69	49	51
12	94	125	54	99	50	46	147	42	237	44	87	49
13	158	161	83	97	51	42	458	41	144	46	103	39
14	100	65	53	62	96	42	321	42	64	42	56	43
15	88	56	50	56	150	43	99	56	70	45	44	69
16	66	54	49	51	114	41	103	45	172	47	43	61
17	84	52	47	206	91	41	128	45	267	50	56	60
18	67	57	51	144	63	40	229	106	80	53	49	72
19	233	189	55	92	74	87	144	84	66	45	41	58
20	728	292	49	65	94	51	199	94	55	65	40	43
21	208	135	51	59	75	42	272	54	143	115	39	38
22	113	71	49	56	57	41	181	76	105	56	39	46
23	124	71	47	160	77	42	163	78	75	45	124	43
24	94	64	49	404	77	43	75	121	79	43	111	35
25	87	66	125	115	54	48	63	63	56	40	84	77
26	326	57	62	136	62	44	61	63	92	40	166	119
27	179	55	52	109	55	77	84	54	90	45	56	74
28	114	54	52	81	51	84	56	49	53	54	45	75
29	92	54	51	107	47	260	65	52	55	40	46	60
30	100	53	48	106	---	109	74	47	82	40	45	51
31	87	---	47	135	---	98	---	43	---	45	40	---
TOTAL	4776	2484	1678	3052	2348	1959	4790	1955	2785	1561	2030	1602
MEAN	154	82.8	54.1	98.5	81.0	63.2	160	63.1	92.8	50.4	65.5	53.4
MAX	728	292	125	404	303	260	458	121	267	115	166	119
MIN	64	52	47	46	47	40	56	41	43	40	39	34
AC-FT	9470	4930	3330	6050	4660	3890	9500	3880	5520	3100	4030	3180

CAL YR 1983 TOTAL 39751 MEAN 109 MAX 728 MIN 47 AC-FT 78850
WTR YR 1984 TOTAL 31020 MEAN 84.8 MAX 728 MIN 34 AC-FT 61530

16200000 NORTH FORK KAUKONAHUA STREAM ABOVE RIGHT BRANCH, NEAR WAHIAWA

LOCATION.--Lat 21°31'09", long 157°56'53", Hydrologic Unit 20060000, on left bank 140 ft upstream from Mauka ditch intake and Right Branch, and 4.5 mi northeast of Wahiawa.

DRAINAGE AREA.--1.38 mi².

PERIOD OF RECORD.--May 1913 to July 1953, April 1960 to current year. Monthly discharge only for some periods, published in WSP 1319. Prior to August 1953, published as Left Branch of North Fork Kaukonahua Stream near Wahiawa.

REVISED RECORDS.--WSP 1219: 1931-33(M), 1935(M), 1937-38(M). WSP 1319: 1914, 1917-18(M), 1920-23(M), 1925(M), 1927-30(M). WSP 1719: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,150 ft, from topographic map.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--61 years (water years 1914-24, 1927-52, 1961-84), 16.4 ft³/s (11,880 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,640 ft³/s Oct. 28, 1981, gage height, 13.2 ft, from rating curve extended above 68 ft³/s on basis of slope-area measurement at gage height, 12.46 ft; minimum, 0.12 ft³/s Mar. 2, 13, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,240 ft³/s Apr. 19, gage height, 6.13 ft, no peak above base of 1,300 ft³/s; minimum, 0.60 ft³/s Jan. 4, Mar. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	7.9	3.8	.77	11	2.6	17	5.9	7.0	2.8	5.4	7.2
2	14	8.7	3.6	.72	26	14	2.5	5.1	3.1	5.2	10	12
3	37	7.7	6.0	.68	3.5	3.0	1.5	11	2.5	3.6	5.8	2.7
4	39	20	4.6	.64	2.7	2.6	1.2	10	2.3	3.0	64	2.3
5	56	12	3.1	64	2.4	2.4	.88	24	2.6	2.4	8.1	2.8
6	13	12	3.0	5.7	2.2	2.1	2.4	12	2.4	2.2	4.4	9.2
7	13	6.5	2.7	2.3	3.3	1.9	1.4	4.9	2.1	2.0	3.6	2.7
8	11	5.9	2.7	5.6	7.7	1.8	1.4	17	2.1	1.9	3.2	2.3
9	8.2	5.3	4.6	1.6	8.9	1.7	1.9	7.9	5.8	49	3.0	5.4
10	10	5.1	4.1	1.2	3.1	1.6	45	4.6	24	10	4.9	2.3
11	37	23	2.6	1.0	2.3	1.5	31	4.1	6.8	3.3	5.9	1.9
12	18	123	2.3	1.0	2.1	1.4	5.7	3.8	3.3	2.7	7.9	2.0
13	18	30	2.3	18	1.7	1.4	23	3.5	3.7	3.2	34	1.7
14	14	9.6	2.5	3.9	43	1.3	7.4	3.2	2.5	2.4	4.4	2.8
15	8.2	7.7	2.0	2.7	74	1.3	4.4	3.3	9.3	2.1	3.3	48
16	7.2	7.9	1.9	1.6	24	1.2	3.6	3.2	49	1.9	2.8	2.8
17	11	6.3	1.7	1.3	7.4	1.1	5.8	5.7	16	2.5	2.6	2.1
18	6.5	5.5	1.6	1.1	22	1.1	7.4	8.5	5.7	1.9	2.6	3.5
19	32	5.3	1.6	.94	34	1.0	88	3.5	4.4	2.3	2.3	2.4
20	57	27	1.5	3.1	7.4	1.0	95	3.3	3.6	7.2	2.2	1.6
21	18	61	1.4	5.9	5.5	.94	86	2.6	6.6	32	2.0	1.4
22	13	7.9	1.3	2.1	4.4	.82	12	16	3.9	5.5	2.1	1.4
23	10	7.0	1.2	36	6.2	.82	9.0	7.9	5.3	2.5	17	1.2
24	8.4	5.9	5.5	7.6	4.4	.77	40	4.2	8.4	20	5.4	1.1
25	9.9	5.7	5.0	5.4	3.9	.72	10	2.8	3.3	3.2	11	1.5
26	29	5.3	2.8	12	6.4	.68	19	7.7	6.8	2.6	11	7.0
27	32	4.6	1.4	13	3.6	.64	9.0	16	3.2	4.8	19	5.7
28	9.6	4.4	1.1	4.1	3.5	1.2	6.3	3.8	2.6	7.1	3.5	14
29	7.7	4.9	1.1	3.9	2.7	9.2	5.7	3.1	3.8	2.5	2.7	3.0
30	9.0	3.9	.94	3.2	---	9.6	4.9	3.6	4.1	2.1	2.3	3.5
31	7.0	---	.88	6.8	---	1.1	---	3.0	---	13	2.3	---
TOTAL	592.7	447.0	80.82	217.85	329.3	72.49	548.38	215.2	206.2	206.9	258.7	157.5
MEAN	19.1	14.9	2.61	7.03	11.4	2.34	18.3	6.94	6.87	6.67	8.35	5.25
MAX	57	123	6.0	64	74	14	95	24	49	49	64	48
MIN	6.5	3.9	.88	.64	1.7	.64	.88	2.6	2.1	1.9	2.0	1.1
AC-FT	1180	887	160	432	653	144	1090	427	409	410	513	312

CAL YR 1983 TOTAL 4285.35 MEAN 11.7 MAX 123 MIN .14 AC-FT 8500
WTR YR 1984 TOTAL 3333.04 MEAN 9.11 MAX 123 MIN .64 AC-FT 6610

16208000 SOUTH FORK KAUKONAHUA STREAM AT EAST PUMP RESERVOIR, NEAR WAHIAWA

LOCATION.--Lat 21°29'32", long 157°59'54", Hydrologic Unit 20060000, on right bank on upstream side of dam at East Pump Reservoir, 2.3 mi east of Wahiawa Post Office, and 7.1 mi north of Waipahu.

DRAINAGE AREA.--4.04 mi^2.

PERIOD OF RECORD.--July 1957 to June 1963, water years 1963-64 (annual maximum), July 1964 to current year.

GAGE.--Water-stage recorder and Ogee-type dam control. Datum of gage is 860.35 ft above mean sea level. July 1, 1963, to June 30, 1964, crest-stage gage at same site and datum.

REMARKS.--Records good. Prior to 1960, diversions from reservoirs above station for use at Schofield Barracks. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--22 years (water years, 1961-62, 1965-84), 21.6 ft^3/s (15,650 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,460 ft^3/s Apr. 15, 1963, gage height, 11.33 ft, from rating curve extended above 1,100 ft^3/s on basis of computation of peak flow over dam; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 805 ft^3/s Apr. 19, gage height, 4.55 ft, no peak above base of 1,100 ft^3/s; minimum, 0.17 ft^3/s Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	14	5.2	1.3	21	3.8	21	7.2	7.5	4.2	6.1	.64
2	20	12	5.0	1.2	71	21	8.5	6.9	5.7	7.4	3.9	.79
3	31	13	4.7	1.1	7.9	5.9	5.5	7.7	4.1	4.4	2.6	2.3
4	39	25	13	1.1	4.5	4.1	3.8	7.4	3.2	5.3	17	1.1
5	71	28	4.9	60	3.3	3.3	2.8	11	2.9	3.8	7.9	.76
6	25	22	4.2	19	2.6	2.8	5.1	33	3.1	2.8	2.9	7.8
7	25	13	3.9	4.0	2.1	2.6	5.4	6.9	3.0	2.6	1.9	3.3
8	27	11	3.7	4.0	22	2.4	4.5	5.5	3.0	2.4	1.5	2.9
9	15	9.8	3.6	3.1	9.2	2.2	6.6	5.8	3.2	15	1.3	5.9
10	21	9.1	7.9	1.8	5.8	2.0	29	4.5	10	25	1.5	3.8
11	32	15	4.3	1.4	2.7	2.0	38	4.0	8.8	4.6	1.9	1.9
12	18	111	3.4	1.1	2.0	1.8	9.1	3.7	7.9	2.9	2.9	1.0
13	34	28	3.3	13	1.7	1.8	21	3.5	6.1	2.4	19	.77
14	18	13	3.3	8.3	38	1.6	15	3.2	3.9	2.3	5.3	.65
15	14	10	3.2	6.7	68	1.5	7.9	5.7	11	2.0	2.1	23
16	12	10	2.6	3.1	45	1.4	7.3	4.6	45	2.3	1.4	4.1
17	26	9.0	2.4	2.1	18	1.3	10	15	18	2.7	1.1	1.5
18	11	8.2	2.2	1.5	52	1.3	12	21	7.1	4.4	1.0	.88
19	45	7.9	2.2	1.1	72	1.3	129	6.3	5.7	2.8	.98	2.2
20	105	23	2.0	.95	23	1.6	170	10	4.8	3.6	.92	1.3
21	32	37	1.9	1.7	13	4.4	91	4.5	4.3	36	.85	.75
22	19	11	1.9	2.3	8.7	3.8	25	40	4.6	6.4	.83	.56
23	20	11	1.7	8.0	7.1	1.7	16	13	4.0	3.1	1.1	.42
24	16	8.1	2.1	12	6.4	1.2	38	6.5	13	9.7	8.7	.34
25	17	7.0	12	2.9	6.0	1.0	19	4.7	5.7	5.6	2.7	.27
26	31	6.8	5.0	2.6	8.5	.96	29	4.1	6.6	2.4	1.3	.26
27	70	7.0	3.2	5.9	6.3	.97	21	8.2	5.4	1.9	2.7	2.3
28	16	6.4	2.1	7.4	4.8	1.8	11	5.1	3.9	2.0	2.2	11
29	14	7.6	1.7	16	4.2	20	9.0	4.3	4.2	2.8	1.1	7.2
30	19	6.0	1.5	8.2	---	21	7.8	4.7	5.9	1.7	.83	1.9
31	12	---	1.4	9.9	---	5.9	---	5.0	---	2.7	.71	---
TOTAL	901	499.9	119.5	212.75	536.8	128.43	778.3	273.0	221.6	177.2	106.22	91.59
MEAN	29.1	16.7	3.85	6.86	18.5	4.14	25.9	8.81	7.39	5.72	3.43	3.05
MAX	105	111	13	60	72	21	170	40	45	36	19	23
MIN	11	6.0	1.4	.95	1.7	.96	2.8	3.2	2.9	1.7	.71	.26
AC-FT	1790	992	237	422	1060	255	1540	541	440	351	211	182

CAL YR 1983 TOTAL 5745.22 MEAN 15.7 MAX 115 MIN .37 AC-FT 11400
WTR YR 1984 TOTAL 4046.29 MEAN 11.1 MAX 170 MIN .26 AC-FT 8030

16211600 MAKAHA STREAM NEAR MAKAHA

LOCATION.--Lat 21°30'16", long 158°10'59", Hydrologic Unit 20060000, on right bank 1.5 mi northeast of Kaneaki Heiau and 3.4 mi northeast of Makaha.

DRAINAGE AREA.--2.31 mi².

PERIOD OF RECORD.--July 1959 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete-masonry control. Datum of gage is 938.64 ft above mean sea level (Waianae Plantation bench mark).

REMARKS.--Records good. Wells and water-development tunnels in the vicinity and above the station may affect low-flow records. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--25 years, 1.92 ft³/s (1,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft³/s Jan. 6, 1982, gage height, 7.40 ft, from floodmarks, from rating curve extended above 51 ft³/s on basis of slope-area measurements at gage heights 6.50 ft and 7.40 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1953, about 7.8 ft Nov. 24, 1954, from information by local resident. Discharge, about 1,700 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 104 ft³/s Mar. 2, gage height, 2.86 ft, no peak above base of 200 ft³/s; minimum, 0.02 ft³/s Sept. 9, 14, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	.66	.27	3.1	3.2	2.6	.25	.45	.13	.11	.06	.03
2	.40	2.4	.27	3.1	13	11	.24	.38	.13	.11	.05	.03
3	.36	3.4	.27	3.1	4.4	3.4	.26	.35	.13	.12	.05	.03
4	.33	3.4	.24	3.1	3.6	7.7	.25	.34	.13	.13	.05	.03
5	.34	2.5	.24	12	3.2	3.8	.24	.32	.13	1.2	.04	.03
6	.30	.62	.24	5.1	3.1	3.3	.24	.30	.11	.27	.04	.03
7	.32	.54	.21	3.9	3.0	3.1	.24	.27	.11	.16	.04	.03
8	.30	.46	.21	3.6	3.1	3.0	.24	.25	.11	.17	.03	.03
9	.28	.40	.24	3.3	3.0	2.8	.23	.21	.11	.17	.04	.03
10	.27	.37	.24	3.2	2.8	2.7	.49	.21	.11	.21	.04	.03
11	.27	2.3	.21	3.2	2.7	3.1	.50	.18	.11	.21	.04	.03
12	.30	1.6	.21	3.1	2.7	3.3	.40	.18	.11	.19	.04	.03
13	.30	1.1	1.6	3.4	2.7	2.8	.94	.18	.10	.16	.04	.04
14	.29	.65	.87	4.0	2.7	2.7	1.5	.16	.10	.15	.04	.03
15	.27	.51	.49	4.1	3.0	2.6	.73	.16	.11	.14	.03	.03
16	.26	.46	.37	3.3	3.0	2.6	.50	.16	.10	.14	.04	.03
17	.25	.42	.31	3.2	2.8	2.6	.49	.16	.10	.13	.03	.03
18	.24	.37	.27	3.2	2.8	2.7	1.8	.16	.10	.12	.03	.03
19	3.8	.40	.25	3.1	4.5	2.6	3.4	.14	.10	.12	.04	.03
20	2.4	.37	.24	3.1	3.2	2.6	3.5	.14	.11	.11	.04	.03
21	.91	.35	.23	2.9	3.0	2.6	3.0	.14	.11	.10	.03	.03
22	.64	.38	.23	2.9	2.8	2.5	2.8	.14	.10	.09	.03	.03
23	.51	.36	.21	2.9	2.7	2.5	2.7	.13	.11	.09	.04	.03
24	.44	.31	.22	2.9	2.7	2.5	4.1	.13	.11	.08	.04	.03
25	.39	.31	.26	2.9	2.6	2.5	2.2	.13	.10	.08	.04	.03
26	.75	.31	.42	2.7	2.6	2.5	4.4	.13	.11	.08	.03	.03
27	1.4	.29	2.0	2.7	2.6	2.5	1.7	.13	.11	.08	.03	.03
28	.69	.28	3.4	2.7	2.6	1.4	.83	.13	.11	.07	.03	.03
29	.50	.32	3.5	2.7	2.6	.30	.61	.13	.11	.07	.04	.03
30	.45	.27	3.3	2.7	---	.26	.50	.13	.11	.06	.03	.03
31	.43	---	3.2	2.7	---	.24	---	.13	---	.06	.03	---
TOTAL	18.87	26.11	24.22	107.9	96.7	90.80	39.28	6.15	3.32	4.98	1.18	.91
MEAN	.61	.87	.78	3.48	3.33	2.93	1.31	.20	.11	.16	.038	.030
MAX	3.8	3.4	3.5	12	13	11	4.4	.45	.13	1.2	.06	.04
MIN	.24	.27	.21	2.7	2.6	.24	.23	.13	.10	.06	.03	.03
AC-FT	37	52	48	214	192	180	78	12	6.6	9.9	2.3	1.8

CAL YR 1983	TOTAL	389.12	MEAN	1.07	MAX	12	MIN	.14	AC-FT	772
WTR YR 1984	TOTAL	420.42	MEAN	1.15	MAX	13	MIN	.03	AC-FT	834

16212800 KIPAPA STREAM NEAR WAHIAWA

LOCATION.--Lat 21°28'13", long 157°57'40", Hydrologic Unit 20060000, on left bank 1,700 ft downstream from forest-reserve boundary, 4.9 mi southeast of Wahiawa Post Office, and 6.3 mi northeast of Waipahu.

DRAINAGE AREA.--4.29 mi^2.

PERIOD OF RECORD.--January 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 690 ft, from topographic map.

REMARKS.--Records good. At times, a small amount of water is diverted from the gage pool for domestic use. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years, 10.8 ft^3/s (7,820 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,680 ft^3/s May 14, 1963, gage height, 12.29 ft, from rating curve extended above 300 ft^3/s on basis of slope-area measurements at gage heights 7.96 ft and 12.29 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 930 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	0130	1180	7.45
Apr. 19	1500	*1440	7.97

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATEP YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	3.8	1.4	.26	15	.95	1.9	3.2	.48	1.0	.32	.00
2	7.5	3.8	1.6	.29	71	12	2.4	3.2	.35	.48	.29	.00
3	6.4	3.0	5.3	.29	5.6	2.5	1.0	2.8	.29	.26	.43	.28
4	6.5	3.7	6.6	.26	3.5	1.3	.81	3.9	.29	.21	6.6	.43
5	31	6.5	1.8	57	2.5	.81	.69	6.5	.29	.19	3.1	1.5
6	8.9	4.2	1.1	11	1.9	.58	.63	21	.29	.09	.81	1.4
7	4.8	3.2	.95	2.5	1.4	.53	.43	3.3	.26	.01	.32	.69
8	6.5	2.3	.81	4.2	4.0	.48	.43	2.5	.26	.00	.23	.39
9	3.7	2.0	.75	2.0	3.5	.29	.43	2.0	.32	1.7	.15	.53
10	4.2	1.9	3.2	1.0	2.7	.32	13	1.5	3.7	7.2	.39	.39
11	4.1	3.8	1.4	.69	1.4	.29	13	1.3	2.4	1.8	.21	.23
12	9.8	48	.81	.58	1.2	.29	3.0	7.2	2.5	.75	.26	.13
13	13	15	.75	16	.95	.26	14	2.0	1.0	.32	9.0	.02
14	4.6	5.2	.81	6.9	26	.26	8.1	1.3	.43	.17	2.2	.00
15	3.2	3.5	.63	5.6	49	.29	4.7	1.3	.39	.08	.58	8.0
16	2.4	3.0	.53	2.0	15	.35	2.5	1.2	5.5	.04	.23	1.4
17	2.2	2.8	.43	1.4	5.4	.32	2.5	.81	4.9	2.9	.13	.32
18	2.2	2.1	.35	1.2	8.6	.32	2.5	3.7	1.6	1.5	.04	.13
19	46	2.0	.35	.75	26	.58	142	2.0	.81	.63	.00	.08
20	43	21	.35	.53	5.9	.75	36	1.4	.43	.75	.00	.23
21	9.9	24	.32	.39	3.9	1.5	27	1.0	.39	28	.00	.13
22	6.4	5.1	.29	.75	3.7	1.3	8.5	15	.43	3.0	.00	.04
23	5.7	3.3	.29	8.1	2.5	.39	5.1	4.7	.39	.95	.00	.00
24	6.2	2.7	.56	7.4	2.2	.35	16	3.0	.39	.63	.19	.00
25	5.4	2.4	4.5	2.1	1.6	.29	24	1.4	.39	.69	.81	.00
26	20	2.1	5.4	5.0	1.5	.29	19	.95	.35	.35	.39	.00
27	43	2.0	1.4	5.4	1.4	.43	11	.88	.39	.32	.53	.00
28	7.0	1.6	.69	4.9	1.3	1.1	5.4	.75	.29	.29	.58	.00
29	5.1	1.4	.43	2.4	1.1	2.7	4.5	1.3	.39	.26	.26	.00
30	4.3	1.6	.32	2.2	---	4.7	5.4	1.0	.95	.17	.03	.00
31	3.3	---	.26	2.0	---	1.5	---	.63	---	.19	.00	---
TOTAL	345.3	187.0	44.38	155.09	269.75	38.12	375.92	102.72	30.85	54.93	28.08	16.32
MEAN	11.1	6.23	1.43	5.00	9.30	1.23	12.5	3.31	1.03	1.77	.91	.54
MAX	46	48	6.6	57	71	12	142	21	5.5	28	9.0	8.0
MIN	2.2	1.4	.26	.26	.95	.26	.43	.63	.26	.00	.00	.00
AC-FT	685	371	88	308	535	76	746	204	61	109	56	32

CAL YR 1983 TOTAL 1739.62 MEAN 4.77 MAX 52 MIN .00 AC-FT 3450
WTR YR 1984 TOTAL 1648.46 MEAN 4.50 MAX 142 MIN .00 AC-FT 3270

16213000 WAIKELE STREAM AT WAIPAHU
(National stream-quality accounting network station)

LOCATION.--Lat 21°23'11", long 159°00'49", Hydrologic Unit 20060000, on left bank 300 ft upstream from bridge on Highway 90 and 0.3 mi southwest of sugar refinery at Waipahu.

DRAINAGE AREA.--45.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to October 1951, December 1951 to October 1959, July 1960 to current year.

REVISED RECORDS.--WSP 1639: 1955(M). WSP 1937: Drainage area. WSP 2137: 1965.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.37 ft above mean sea level. Prior to July 1, 1960, at site 300 ft downstream at datum 1.30 ft higher.

REMARKS.--Records good. Diversions above station for irrigation of sugarcane in vicinity of Waipahu.

AVERAGE DISCHARGE.--31 years (water years 1953-59, 1961-84), 38.8 ft^3/s (28,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft^3/s Nov. 28, 1954, gage height, 14.82 ft, site and datum then in use, from rating curve extended above 730 ft^3/s on basis of slope-area measurement of peak flow; no flow for part of Feb. 25, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft^3/s Apr. 19, gage height 4.48 ft, no peak above base of 1,300 ft^3/s; minimum, 0.36 ft^3/s May 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	14	11	28	34	11	27	12	8.8	16	4.7	8.5
2	40	18	7.8	28	158	43	18	14	14	10	4.6	18
3	28	15	13	28	45	29	12	12	22	4.9	5.4	18
4	33	13	35	26	30	30	10	13	16	15	11	9.0
5	50	23	18	60	27	30	8.8	23	4.5	12	16	8.1
6	44	36	12	69	19	22	5.9	56	5.0	7.4	12	4.1
7	24	24	9.4	35	18	8.7	14	27	8.5	9.0	8.1	5.2
8	28	14	7.4	29	26	15	21	13	9.2	16	4.2	13
9	32	11	6.4	27	28	21	12	12	14	12	6.8	14
10	19	14	7.4	27	26	23	15	11	22	8.4	5.8	10
11	20	14	8.6	29	29	23	33	13	14	5.0	7.4	5.3
12	20	57	9.1	[illegible]6	26	21	21	20	10	4.3	9.0	6.2
13	32	51	12	28	17	21	18	27	9.5	4.4	6.9	5.4
14	18	31	6.6	42	37	21	39	15	8.9	9.9	5.8	4.7
15	21	15	9.9	43	59	20	31	9.0	8.6	16	6.1	11
16	28	16	12	28	52	21	15	5.8	14	8.4	5.3	17
17	22	14	22	24	37	19	10	8.8	26	6.2	5.3	11
18	13	12	25	21	35	23	13	8.7	19	3.5	10	4.5
19	42	20	25	14	65	20	176	18	8.8	4.4	15	6.0
20	121	42	25	18	44	15	137	22	7.7	4.2	5.4	6.3
21	42	45	23	22	37	13	86	16	7.3	23	5.9	5.1
22	25	27	26	22	28	13	55	19	6.8	22	5.8	10
23	23	15	27	21	25	18	31	27	13	9.9	5.6	14
24	17	27	31	27	18	26	25	15	21	3.6	5.6	5.9
25	18	31	30	13	17	27	58	14	11	3.4	10	4.2
26	19	29	33	18	21	16	93	20	6.8	3.8	16	4.8
27	86	27	31	26	12	10	70	24	5.1	4.4	5.8	4.9
28	29	22	25	27	12	12	41	19	5.0	11	4.9	6.5
29	22	10	28	24	19	10	30	9.5	5.2	16	6.8	10
30	36	10	28	18	---	14	16	8.7	8.5	9.1	5.7	12
31	24	---	28	23	---	22	---	7.5	---	4.1	5.6	---
TOTAL	1038	697	592.6	871	1001	617.7	1141.7	520.0	340.2	287.3	232.5	2[illegible]2.7
MEAN	33.5	23.2	19.1	28.1	34.5	19.9	38.1	16.8	11.3	9.27	7.50	8.76
MAX	121	57	35	69	158	43	176	56	26	23	16	18
MIN	13	10	6.4	13	12	8.7	5.9	5.8	4.5	3.4	4.2	4.1
AC-FT	2060	1380	1180	1730	1990	1230	2260	1030	675	570	461	521

CAL YR 1983 TOTAL 10088.6 MEAN 27.6 MAX 121 MIN 6.4 AC-FT 20010
WTR YR 1984 TOTAL 7601.7 MEAN 20.8 MAX 176 MIN 3.4 AC-FT 15080

16213000 WAIKELE STREAM AT WAIPAHU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-72. April 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1973 to September 1981.
WATER TEMPERATURE: April 1973 to September 1981.
SUSPENDED SEDIMENT DISCHARGE: July 1972 to current year.

INSTRUMENTATION.--Water-quality monitor April 1973 to September 1981. Automatic pumping sediment sampler since July 1972.

REMARKS.--In addition to the sediment record, water-quality samples were collected once a month.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 796 micromhos/cm Dec. 1, 1980; minimum, 30 micromhos/cm Apr. 19, 1974.
WATER TEMPERATURES: Maximum, 30.0°C May 6, 1973; minimum, 16.0°C Mar. 16, 1976.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,420 mg/L Feb. 7, 1976; minimum daily mean, 5 mg/L for many days in 1983.
SEDIMENT DISCHARGE: Maximum daily, 32,900 tons Apr. 19, 1974; minimum daily, 0.07 ton Sept, 4, Oct. 1, 1975.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 394 mg/L Apr. 19; minimum daily mean, 6 mg/L for a few days during the year.
SEDIMENT DISCHARGE: Maximum daily, 635 tons Apr. 19; minimum daily, 0.08 ton July 12, 13, 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT												
17...	0900	762	24	642	6.9	25.0	1.4	5.5	67	17000	K8400	110
DEC												
06...	0945	763	12	440	6.9	21.5	1.5	5.9	67	3200	3800	67
JAN												
10...	1545	--	28	600	7.6	23.5	--	--	--	--	--	--
FEB												
21...	0945	766	31	370	6.7	22.0	5.1	6.5	74	5900	4900	61
MAR												
01...	1000	--	6.6	490	6.9	22.0	--	--	--	--	--	--
APR												
13...	0950	--	7.0	385	6.9	23.0	--	--	--	--	--	--
30...	1000	768	16	380	7.0	23.0	5.2	6.4	74	1800	4400	58
MAY												
31...	1020	--	10	500	6.9	23.5	--	--	--	--	--	--
JUN												
19...	1015	766	9.4	--	6.9	23.5	1.9	5.6	66	18000	3200	65
AUG												
27...	0945	763	5.2	620	7.0	25.0	1.4	5.2	63	2800	920	110

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT											
17...	58	19	16	74	58	3	3.4	56	22	140	.10
DEC											
06...	11	11	9.6	57	4	3	3.2	56	22	75	.20
FEB											
21...	11	11	8.2	46	61	3	2.7	50	19	64	.10
APR											
30...	2	10	8.1	49	63	3	2.9	56	19	64	.20
JUN											
19...	10	11	9.0	58	65	3	3.1	55	21	73	.30
AUG											
27...	47	18	16	79	60	3	2.9	64	23	140	.10

K Results based on colony count outside the acceptable range (non-ideal colony count).

16213000 WAIKELE STREAM AT WAIPAHU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT 17...	55	365	370	.50	2.4	.110	1.3	.630	.630	.590	10
DEC 06...	56	278	270	.38	3.1	.040	1.3	.940	.910	.830	--
FEB 21...	45	225	230	.31	--	--	--	--	--	--	50
APR 30...	49	230	240	.31	2.8	.470	1.3	.990	.990	1.20	20
JUN 19...	57	286	270	.39	3.0	.030	.50	1.00	1.00	.950	--
AUG 27...	60	367	380	.50	1.5	.060	<.20	.200	.180	.180	<10

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT 17...	<1	16	<.5	<1	<1	<3	2	15	1	7	50
FEB 21...	1	11	<.5	<1	1	<3	4	100	1	5	55
APR 30...	<1	12	<.5	<1	1	<3	3	52	<1	52	71
AUG 27...	<1	14	<1	<1	2	<3	2	13	4	7	61

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 17...	<.1	<10	4	1	<1	130	28	42
FEB 21...	<.1	<10	<1	<1	<1	71	22	19
APR 30...	<.1	<10	9	1	<1	71	25	12
AUG 27...	<.1	<10	4	1	2	130	35	6

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 17...	0900	2	.13	100
DEC 06...	0945	4	.13	100
FEB 21...	0945	7	.59	100
APR 30...	1000	9	.39	100
JUN 19...	1015	5	.13	100
AUG 27...	0945	4	.06	100

< Actual value is known to be less than the value shown.

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	62	18	3.0	14	8	.30	11	8	.24
2	40	12	1.3	18	9	.44	7.8	8	.17
3	28	10	.76	15	8	.32	13	8	.28
4	33	11	.98	13	7	.25	35	9	.76
5	50	20	2.7	23	8	.50	18	8	.39
6	44	12	1.4	36	9	.87	12	8	.26
7	24	8	.52	24	9	.58	9.4	7	.18
8	28	10	.76	14	7	.26	7.4	7	.14
9	32	10	.86	11	7	.21	6.4	7	.12
10	19	10	.51	14	8	.30	7.4	7	.14
11	20	10	.54	14	8	.30	8.6	7	.16
12	20	12	.65	57	18	2.8	9.1	7	.17
13	32	18	1.6	51	12	1.7	12	8	.26
14	18	10	.49	31	8	.67	6.6	8	.14
15	21	9	.51	15	8	.32	9.9	8	.21
16	28	8	.60	16	6	.26	12	8	.26
17	22	6	.36	14	6	.23	22	8	.48
18	13	6	.21	12	6	.19	25	9	.61
19	42	28	3.2	20	7	.38	25	8	.54
20	121	62	22	42	13	1.5	25	8	.54
21	42	15	1.7	45	13	1.6	23	8	.50
22	25	10	.68	27	9	.66	26	8	.56
23	23	10	.62	15	8	.32	27	8	.58
24	17	8	.37	27	11	.80	31	13	1.1
25	18	8	.39	31	11	.92	30	18	1.5
26	19	8	.41	29	9	.70	33	15	1.3
27	86	43	12	27	8	.58	31	13	1.1
28	29	13	1.0	22	8	.48	25	10	.68
29	22	8	.48	10	8	.22	28	9	.68
30	36	8	.78	10	7	.19	28	9	.68
31	24	7	.45	---	---	---	28	9	.68
TOTAL	1038	---	61.83	697	---	18.85	592.6	---	15.41
		JANUARY			FEBRUARY			MARCH	
1	28	9	.63	34	15	1.4	11	16	.48
2	28	9	.68	158	358	291	43	32	3.7
3	28	10	.76	45	45	5.5	29	20	1.6
4	26	10	.70	30	22	1.8	30	26	2.1
5	60	47	13	27	14	1.0	30	24	1.9
6	69	48	10	19	12	.62	22	15	.89
7	35	30	2.8	18	12	.58	8.7	15	.35
8	29	33	2.6	26	11	.77	15	15	.61
9	27	30	2.2	28	11	.83	21	15	.85
10	27	14	1.0	26	10	.70	23	14	.87
11	29	10	.78	29	9	.70	23	20	1.2
12	26	9	.63	26	9	.63	21	20	1.1
13	28	12	.91	17	10	.46	21	12	.68
14	42	20	2.3	37	25	3.0	21	12	.68
15	43	22	2.6	59	48	10	20	12	.65
16	28	15	1.1	52	24	3.4	21	15	.85
17	24	11	.71	37	16	1.6	19	18	.92
18	21	11	.62	35	16	1.5	23	18	1.1
19	14	9	.34	65	44	10	20	16	.86
20	18	9	.44	44	24	2.9	15	13	.53
21	22	9	.53	37	18	1.8	13	12	.42
22	22	10	.59	28	17	1.3	13	10	.35
23	21	12	.68	25	22	1.5	18	11	.53
24	27	14	1.0	18	30	1.5	26	11	.77
25	13	9	.32	17	30	1.4	27	11	.80
26	18	9	.44	21	27	1.5	16	12	.52
27	26	9	.63	12	30	.97	10	15	.41
28	27	10	.73	12	30	.97	12	17	.55
29	24	10	.65	19	26	1.3	10	15	.41
30	18	10	.49	---	---	---	14	18	.68
31	23	10	.62	---	---	---	22	17	1.0
TOTAL	871	---	51.53	1001	---	350.63	617.7	---	28.36

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	27	13	.95	12	13	.42	8.8	12	.29
2	18	15	.73	14	15	.57	14	11	.42
3	12	15	.49	12	13	.42	22	10	.59
4	10	13	.35	13	13	.46	16	10	.43
5	8.8	13	.31	23	15	.93	4.5	15	.18
6	5.9	13	.21	56	22	3.3	5.0	15	.20
7	14	14	.53	27	15	1.1	8.5	12	.28
8	21	13	.74	13	12	.42	9.2	11	.27
9	12	13	.42	12	12	.39	14	12	.45
10	15	15	.61	11	12	.36	22	12	.71
11	33	22	2.0	13	14	.49	14	10	.38
12	21	17	.96	20	12	.65	10	10	.27
13	18	15	.73	27	12	.87	9.5	15	.38
14	39	16	1.7	15	28	1.1	8.9	15	.36
15	31	10	.84	9.0	25	.61	8.6	12	.28
16	15	10	.41	5.8	17	.27	14	12	.45
17	10	10	.27	8.8	14	.33	26	14	.98
18	13	10	.35	8.7	14	.33	19	13	.67
19	176	394	635	18	14	.68	8.8	10	.24
20	137	255	104	22	11	.65	7.7	25	.52
21	86	50	12	16	10	.43	7.3	20	.39
22	55	25	3.7	19	32	1.6	6.8	15	.28
23	31	17	1.4	27	42	3.1	13	13	.46
24	25	20	1.4	15	25	1.0	21	12	.68
25	58	26	4.1	14	17	.64	11	11	.33
26	93	148	66	20	17	.92	6.8	11	.20
27	70	70	13	24	18	1.2	5.1	11	.15
28	41	20	2.2	19	17	.87	5.0	11	.15
29	30	16	1.3	9.5	17	.44	5.2	12	.17
30	16	15	.65	8.7	15	.35	8.5	13	.30
31	---	---	---	7.5	13	.26	---	---	---
TOTAL	1141.7	---	857.35	520.0	---	25.16	340.2	---	11.46

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	16	13	.56	4.7	8	.10	8.5	14	.32
2	10	13	.35	4.6	13	.16	18	16	.78
3	4.9	8	.11	5.4	14	.20	18	10	.49
4	15	7	.28	11	12	.36	9.0	10	.24
5	12	7	.23	16	12	.52	8.1	12	.26
6	7.4	8	.16	12	12	.39	4.1	12	.13
7	9.0	8	.19	8.1	10	.22	5.2	12	.17
8	16	8	.35	4.2	9	.10	13	15	.53
9	12	8	.26	6.8	8	.15	14	12	.45
10	8.4	8	.18	5.8	10	.16	10	12	.32
11	5.0	6	.11	7.4	10	.20	5.3	11	.16
12	4.3	7	.08	9.0	9	.22	6.2	13	.22
13	4.4	7	.08	6.9	10	.19	5.4	17	.25
14	9.9	7	.19	5.8	10	.16	4.7	15	.19
15	16	7	.30	6.1	10	.16	11	10	.30
16	8.4	7	.16	5.3	11	.16	17	9	.41
17	6.2	8	.13	5.3	11	.16	11	9	.27
18	3.5	8	.08	10	13	.35	4.5	11	.13
19	4.4	8	.10	15	15	.61	6.0	9	.15
20	4.2	10	.11	5.4	16	.23	6.3	7	.12
21	23	22	1.4	5.9	15	.24	5.1	7	.10
22	22	16	.95	5.8	13	.20	10	7	.19
23	9.9	13	.35	5.6	12	.18	14	7	.26
24	3.6	14	.14	5.6	12	.18	5.9	8	.13
25	3.4	14	.13	10	12	.32	4.2	8	.09
26	3.8	13	.13	16	12	.52	4.8	9	.12
27	4.4	13	.15	5.8	12	.19	4.9	10	.13
28	11	20	.59	4.9	12	.16	6.5	10	.18
29	16	22	.95	6.8	12	.22	10	12	.32
30	9.1	18	.44	5.7	13	.20	12	12	.39
31	4.1	12	.13	5.6	13	.20	---	---	---
TOTAL	287.3	---	9.37	232.5	---	7.41	262.7	---	7.80
YEAR	7601.7		1445.16						

16216000 WAIAWA STREAM NEAR PEARL CITY

LOCATION.--Lat 21°23'57", long 157°58'51", Hydrologic Unit 20060000, on left bank 100 ft upstream from lower bridge on Highway 90, 0.6 mi northwest of Pearl City, and 2.0 mi northeast of Waipahu.

DRAINAGE AREA.--26.4 mi².

PERIOD OF RECORD.--June 1952 to current year.

REVISED RECORDS.--WSP 1569: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.81 ft above mean sea level.

REMARKS.--Records good except those above 200 ft³/s which are poor. Low flow affected by effluent from sewage treatment plant and occasional small irrigation diversion and return flow above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--32 years, 33.3 ft³/s (24,130 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft³/s Oct. 28, 1981, gage height, 26.46 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurements at gage heights 17.1 ft and 20.56 ft; minimum, 1.1 ft³/s for few days in August and September 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,950 ft³/s Apr. 19, gage height, 10.70 ft, no other peak above base of 2,300 ft³/s; minimum, 1.1 ft³/s for few days in August and September 1984.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	3.2	1.8	1.9	15	1.7	1.7	3.4	1.5	1.4	1.4	1.2
2	15	2.9	1.8	1.9	190	15	1.7	2.8	1.4	1.4	1.2	1.2
3	9.2	2.8	1.8	2.0	15	6.7	1.7	2.4	1.4	1.4	1.2	1.3
4	8.1	2.5	1.8	2.0	6.6	4.6	1.7	3.1	1.4	1.4	1.4	1.3
5	12	3.2	1.8	220	3.9	2.7	1.7	2.5	1.4	1.4	1.4	1.3
6	18	9.1	1.8	37	2.9	2.2	1.7	4.4	1.4	1.4	1.4	1.3
7	7.4	6.8	1.8	7.8	2.4	2.1	1.7	4.3	1.4	1.4	1.4	1.7
8	4.4	4.2	1.8	5.4	2.7	1.9	1.8	2.6	1.4	1.4	1.2	1.3
9	3.2	3.0	1.8	4.5	3.2	1.8	1.7	1.9	1.4	1.4	1.2	1.3
10	2.6	2.4	1.8	2.7	2.4	1.8	1.6	1.8	1.5	1.4	1.2	1.3
11	3.5	2.7	1.8	2.2	2.2	1.9	1.6	1.7	1.5	1.4	1.3	1.3
12	5.9	162	1.8	2.1	2.1	2.2	1.6	1.7	1.6	1.4	1.3	1.3
13	14	51	1.8	4.7	2.0	2.1	1.6	1.6	1.5	1.4	1.3	1.3
14	6.9	19	1.8	12	23	1.7	4.6	1.6	1.5	1.4	1.3	1.3
15	4.4	9.4	1.8	9.4	144	1.7	4.5	1.6	1.5	1.4	1.4	1.2
16	3.4	5.8	1.8	4.3	38	1.7	2.6	1.5	1.5	1.4	1.4	1.2
17	2.5	4.5	1.8	2.9	15	1.7	1.9	1.5	1.4	1.4	1.5	1.8
18	2.2	3.3	1.8	2.4	14	1.8	1.6	1.5	1.4	1.3	1.4	1.2
19	2.4	2.6	1.9	2.1	70	1.8	305	1.5	1.4	1.3	1.3	1.2
20	69	4.6	1.9	2.0	23	1.7	94	1.5	1.4	1.4	1.2	1.2
21	28	23	1.9	2.0	11	1.7	61	1.5	1.4	1.6	1.2	1.2
22	13	11	1.9	2.0	5.8	1.7	28	1.5	1.4	1.4	1.2	1.2
23	7.7	4.6	1.9	2.0	3.8	1.7	12	1.8	1.4	1.4	1.2	1.2
24	5.9	3.1	2.3	1.9	3.3	1.7	7.2	1.5	1.4	1.4	1.2	1.2
25	4.5	2.3	2.3	1.9	3.0	1.7	37	1.4	1.4	1.4	1.3	1.2
26	3.9	2.3	2.4	1.9	2.4	1.7	50	1.5	1.4	1.4	1.3	1.2
27	61	2.0	2.7	2.4	2.0	1.7	38	1.4	1.4	1.4	1.2	1.2
28	16	1.8	2.0	2.4	1.8	1.8	14	1.4	1.4	1.4	1.2	1.2
29	7.6	1.8	2.0	2.3	1.7	1.8	7.5	1.4	1.4	1.4	1.2	1.3
30	5.4	1.8	1.9	2.1	---	1.8	4.7	1.4	1.4	1.4	1.2	1.3
31	4.1	---	1.9	2.0	---	1.7	---	1.4	---	1.4	1.2	---
TOTAL	384.2	358.7	59.4	352.2	612.2	77.8	695.4	61.1	42.9	43.4	39.8	38.4
MEAN	12.4	12.0	1.92	11.4	21.1	2.51	23.2	1.97	1.43	1.40	1.28	1.28
MAX	69	[illegible]	2.7	220	190	15	305	4.4	1.6	1.6	1.5	1.8
MIN	2.2	1.8	1.8	1.9	1.7	1.7	1.6	1.4	1.4	1.3	1.2	1.2
AC-FT	762	711	118	699	1210	154	1380	121	85	86	79	76

CAL YR 1983 TOTAL 2629.9 MEAN 7.21 MAX 162 MIN 1.8 AC-FT 5220
WTR YR 1984 TOTAL 2765.5 MEAN 7.56 MAX 305 MIN 1.2 AC-FT 5490

16226000 NORTH HALAWA STREAM NEAR AIEA

LOCATION.--Lat 21°23'46", long 157°53'37", Hydrologic Unit 20060000, on left bank 2.7 mi upstream from confluence with South Halawa Stream and 2.7 mi northeast of Aiea Post Office.

DRAINAGE AREA.--3.45 mi^2.

PERIOD OF RECORD.--August 1929 to June 1933, July 1953 to current year. Monthly discharge only May, June 1931, published in WSP 1319.

REVISED RECORDS.--WSP 1319: Drainage area. WSP 1719: 1954-55(P), 1956, 1957(P), 1958-59.

GAGE.--Water-stage recorder. Altitude of gage is 320 ft, from topographic map.

REMARKS.--Records good except for periods of no gage-height record, which are poor. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--34 years (water years 1930-32, 1954-84), 4.93 ft^3/s (3,570 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,650 ft^3/s Feb. 28, 1932, gage height, 13.36 ft, from rating curve extended above 420 ft^3/s; maximum gage height, 13.46 ft May 14, 1963; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 299 ft^3/s Jan. 5, gage height, 7.65 ft, no peak above base of 570 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	1.1	.03	.02	2.1	.02	.00	.25	.00	.00	.00	.00
2	4.0	1.1	.04	.01	9.9	5.9	.00	.14	.00	.00	.00	.00
3	1.9	.80	.03	.01	2.3	.88	.00	.10	.00	.00	.00	.00
4	2.2	.63	.02	.01	1.0	.44	.00	.05	.00	.00	.00	.00
5	3.3	2.3	.01	63	.58	.23	.00	.03	.00	.00	.00	.00
6	2.0	2.5	.01	12	.34	.09	.00	1.9	.00	.00	.00	.00
7	1.0	1.4	.01	3.4	.19	.06	.00	.58	.00	.00	.00	.00
8	.68	.88	.01	1.7	.13	.04	.00	.32	.00	.00	.00	.00
9	.40	.58	.01	1.0	.09	.03	.00	.17	.00	.00	.00	.00
10	.23	.32	.01	.64	.05	.01	.00	.09	.00	.00	.00	.00
11	.14	12	.01	.52	.03	.01	.00	.04	.00	.00	.00	.00
12	.10	51	.01	.25	.02	.01	.00	.03	.00	.00	.00	.00
13	2.0	17	.01	3.7	.02	.01	.00	.02	.00	.00	.00	.00
14	1.4	5.8	.01	2.0	3.5	.01	.00	.01	.00	.00	.00	.00
15	.80	3.0	.00	1.1	25	.01	.00	.01	.00	.00	.00	.00
16	.52	2.0	.00	.75	6.8	.01	.00	.01	.00	.00	.00	.00
17	.32	1.3	.00	.52	3.2	.01	.00	.01	.00	.00	.00	.00
18	.19	.88	.00	.32	2.2	.01	.00	.01	.00	.00	.00	.00
19	21	.68	.00	.18	13	.01	33	.01	.00	.00	.00	.00
20	27	3.6	.00	.11	3.8	.01	29	.01	.00	.00	.00	.00
21	6.4	5.0	.00	.07	2.0	.01	12	.01	.00	.00	.00	.00
22	3.2	2.0	.00	.04	1.1	.01	3.9	.02	.00	.00	.00	.00
23	2.2	1.1	.00	.03	.75	.00	1.5	.01	.00	.00	.00	.00
24	1.2	.75	.00	.02	.48	.00	.88	.01	.00	.00	.00	.00
25	.88	.58	.01	.02	.29	.00	.93	.01	.00	.00	.00	.00
26	2.8	.32	3.7	.02	.17	.00	2.3	.00	.00	.00	.00	.00
27	16	.18	.75	.02	.10	.00	2.5	.00	.00	.00	.00	.00
28	4.1	.11	.38	.02	.07	.00	1.2	.00	.00	.00	.00	.00
29	1.9	.08	.19	.01	.03	.00	.80	.00	.00	.00	.00	.00
30	1.7	.04	.10	.01	---	.00	.44	.00	.00	.00	.00	.00
31	1.3	---	.03	.01	---	.00	---	.00	---	.00	.00	---
TOTAL	121.86	119.03	5.38	91.51	79.24	7.82	88.45	3.85	.00	.00	.00	.00
MEAN	3.93	3.97	.17	2.95	2.73	.25	2.95	.12	.00	.00	.00	.00
MAX	27	51	3.7	63	25	5.9	33	1.9	.00	.00	.00	.00
MIN	.10	.04	.00	.01	.02	.00	.00	.00	.00	.00	.00	.00
AC-FT	242	236	11	182	157	16	175	7.6	.00	.00	.00	.00

CAL YR 1983 TOTAL 510.42 MEAN 1.40 MAX 51 MIN .00 AC-FT 1010
WTR YR 1984 TOTAL 517.14 MEAN 1.41 MAX 63 MIN .00 AC-FT 1030

NOTE.--No gage-height record Oct. 1-5, Jan. 8-13, Mar. 6 to Apr. 18, Sept. 26-30.

16226200 NORTH HALAWA STREAM NEAR HONOLULU

LOCATION.--Lat 21°22'34", long 157°54'22", Hydrologic Unit 20060000, on right bank 0.5 mi north of Halawa quarry, 1.7 mi east of Aiea High School, and 1.9 mi east of Aiea.

DRAINAGE AREA.--4.01 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1983 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 160 ft, from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 330 ft^3/s Jan. 5, gage height, 9.20 ft; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	1.0	.06	.04	.75	.04	.00	.41	.00	.00	.00	.00
2	3.8	1.0	.04	.03	9.4	4.7	.00	.25	.00	.00	.00	.00
3	2.1	.88	.04	.03	2.4	1.0	.00	.12	.00	.00	.00	.00
4	2.3	.72	.03	.02	1.0	.50	.00	.07	.00	.00	.00	.00
5	3.3	1.8	.03	68	.61	.27	.00	.05	.00	.00	.00	.00
6	2.4	2.2	.03	12	.38	.17	.00	1.0	.00	.00	.00	.00
7	1.1	1.4	.03	3.7	.21	.08	.00	.64	.00	.00	.00	.00
8	.76	.84	.03	1.7	.15	.04	.00	.41	.00	.00	.00	.00
9	.57	.64	.02	1.0	.10	.03	.00	.25	.00	.00	.00	.00
10	.41	.47	.02	.64	.05	.02	.00	.12	.00	.00	.00	.00
11	.25	8.5	.02	.50	.03	.02	.00	.07	.00	.00	.00	.00
12	.17	57	.02	.30	.03	.02	.00	.05	.00	.00	.00	.00
13	1.2	20	.02	3.0	.03	.01	.00	.03	.00	.00	.00	.00
14	1.2	5.6	.02	2.2	2.5	.01	.00	.03	.00	.00	.00	.00
15	.84	3.2	.01	1.1	24	.01	.00	.03	.00	.00	.00	.00
16	.54	2.1	.01	.76	7.3	.01	.00	.03	.00	.00	.00	.00
17	.41	1.5	.01	.57	3.7	.01	.00	.03	.00	.00	.00	.00
18	.23	1.0	.01	.41	2.4	.01	.00	.02	.00	.00	.00	.00
19	20	.88	.01	.21	11	.01	30	.02	.00	.00	.00	.00
20	30	3.1	.01	.12	4.2	.01	32	.02	.00	.00	.00	.00
21	6.2	4.7	.01	.07	2.2	.01	12	.01	.00	.00	.00	.00
22	3.2	2.3	.01	.04	1.2	.01	4.7	.01	.00	.00	.00	.00
23	2.3	1.1	.01	.03	.88	.00	1.9	.02	.00	.00	.00	.00
24	1.3	.76	.01	.04	.61	.00	1.0	.02	.00	.00	.00	.00
25	.96	.61	.02	.03	.41	.00	1.0	.01	.00	.00	.00	.00
26	2.0	.44	2.3	.03	.25	.00	2.2	.01	.00	.00	.00	.00
27	15	.25	.76	.03	.17	.00	3.0	.01	.00	.00	.00	.00
28	4.1	.17	.38	.03	.09	.00	1.5	.01	.00	.00	.00	.00
29	1.9	.12	.25	.03	.05	.00	1.0	.01	.00	.00	.00	.00
30	1.6	.08	.13	.03	---	.00	.64	.01	.00	.00	.00	.00
31	1.4	---	.07	.02	---	.00	---	.00	---	.00	.00	---
TOTAL	121.54	124.36	4.42	96.71	76.10	6.99	90.94	3.77	.00	.00	.00	.00
MEAN	3.92	4.15	.14	3.12	2.62	.23	3.03	.12	.00	.00	.00	.00
MAX	30	57	2.3	68	24	4.7	32	1.0	.00	.00	.00	.00
MIN	.17	.08	.01	.02	.03	.00	.00	.00	.00	.00	.00	.00
AC-FT	241	247	8.8	192	151	14	180	7.5	.00	.00	.00	.00

WTR YR 1984 TOTAL 524.83 MEAN 1.43 MAX 68 MIN .00 AC-FT 1040

16226200 NORTH HALAWA STREAM NEAR HONOLULU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1983 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: February 1983 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since February 1983.

REMARKS.--Water-quality samples were also collected at this site.

EXTREMES FOR PERIOD OF RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 42 mg/L Oct. 27, 1983; no flow for many days each year.
SEDIMENT DISCHARGE: Maximum daily, 8.7 tons Apr. 19, 1984; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 42 mg/L Oct. 27; no flow for many days.
SEDIMENT DISCHARGE: Maximum daily, 8.7 tons Apr. 19; no flow for many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT											
05...	1410	--	1.8	125	7.2	23.0	--	--	--	--	--
13...	1520	--	2.1	135	6.9	23.5	--	--	--	--	--
31...	1010	760	1.3	135	7.3	22.0	1.3	7.2	82	44	--
NOV											
22...	1530	--	1.9	125	7.4	23.0	--	--	--	--	--
JAN											
10...	1305	--	.56	140	7.2	21.0	--	--	--	--	--
13...	1450	--	13	110	7.3	21.0	--	--	--	--	--
FEB											
07...	0930	761	.24	140	6.9	19.0	1.5	7.7	83	16	37
MAR											
02...	0930	753	12	80	6.9	20.0	14	7.8	87	6200	19
06...	1445	--	.17	145	6.8	21.5	--	--	--	--	--
APR											
20...	1000	760	37	110	6.9	21.0	8.3	8.3	93	--	--

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB											
07...	0	5.7	5.5	13	43	1	.70	40	3.5	18	<.10
MAR											
02...	0	3.2	2.6	8.0	47	.8	.90	19	7.4	11	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)
OCT											
31...	--	--	--	--	<1	<.10	.30	.060	--	--	--
FEB											
07...	21	89	92	.12	<2	<.10	<.20	.030	50	50	<1
MAR											
02...	8.8	59	54	.08	15	--	.50	.040	160	120	--
APR											
20...	--	--	--	--	<2	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

16226200 NORTH HALAWA STREAM NEAR HONOLULU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)
FEB											
07...	<1	<100	6	<10	.6	<1	<1	<10	<1	<1	<3
MAR											
02...	<1	<100	6	<10	<.5	<1	<1	10	<1	<1	<3

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
FEB											
07...	2	<1	20	24	<2	3	<10	<4	30	3	<.1
MAR											
02...	6	1	1300	140	11	5	<10	<4	40	4	.1

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
FEB											
07...	<.1	<1	<10	4	<1	<1	<1	<2	<1	37	<6
MAR											
02...	<.1	5	<10	13	<1	<1	<1	<1	<1	21	<6

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB											
07...	50	4	.60	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01
MAR											
02...	20	5	7.1	<1	<.1	<.010	<.1	<.010	<.010	<.010	.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB											
07...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
MAR											
02...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB										
07...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	.01
MAR										
02...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

16226200 NORTH HALAWA STREAM NEAR HONOLULU--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	10	2	.05	1.0	2	.00	.06	1	.00
2	3.8	1	.01	1.0	2	.00	.04	1	.00
3	2.1	1	.00	.88	2	.00	.04	1	.00
4	2.3	1	.00	.72	2	.00	.03	1	.00
5	3.3	4	.04	1.8	4	.02	.03	1	.00
6	2.4	2	.01	2.2	2	.01	.03	1	.00
7	1.1	1	.00	1.4	2	.00	.03	1	.00
8	.76	1	.00	.84	1	.00	.03	1	.00
9	.57	1	.00	.64	1	.00	.02	0	.00
10	.41	1	.00	.47	1	.00	.02	0	.00
11	.25	1	.00	8.5	6	.14	.02	0	.00
12	.17	1	.00	57	20	3.1	.02	0	.00
13	1.2	5	.02	20	5	.27	.02	0	.00
14	1.2	4	.01	5.6	2	.03	.02	0	.00
15	.84	3	.00	3.2	1	.00	.01	0	.00
16	.54	2	.00	2.1	1	.00	.01	0	.00
17	.41	1	.00	1.5	1	.00	.01	0	.00
18	.23	1	.00	1.0	1	.00	.01	0	.00
19	20	11	1.2	.88	1	.00	.01	0	.00
20	30	14	1.3	3.1	2	.02	.01	0	.00
21	6.2	4	.07	4.7	4	.05	.01	0	.00
22	3.2	3	.03	2.3	4	.02	.01	0	.00
23	2.3	2	.01	1.1	2	.00	.01	0	.00
24	1.3	2	.00	.76	2	.00	.01	0	.00
25	.96	1	.00	.61	2	.00	.02	1	.00
26	2.0	3	.02	.44	2	.00	2.3	5	.03
27	15	42	1.7	.25	1	.00	.76	2	.00
28	4.1	28	.31	.17	1	.00	.38	2	.00
29	1.9	10	.05	.12	1	.00	.25	1	.00
30	1.6	4	.02	.08	1	.00	.13	1	.00
31	1.4	2	.00	---	---	---	.07	1	.00
TOTAL	121.54	---	4.85	124.36	---	3.66	4.42	---	0.03
		JANUARY			FEBRUARY			MARCH	
1	.04	1	.00	.75	6	.01	.04	1	.00
2	.03	1	.00	9.4	12	.49	4.7	10	.32
3	.03	1	.00	2.4	3	.02	1.0	7	.02
4	.02	1	.00	1.0	2	.00	.50	3	.00
5	68	40	7.3	.61	2	.00	.27	2	.00
6	12	15	.49	.38	2	.00	.17	1	.00
7	3.7	7	.07	.21	1	.00	.08	1	.00
8	1.7	5	.02	.15	1	.00	.04	1	.00
9	1.0	5	.01	.10	1	.00	.03	1	.00
10	.64	3	.00	.05	1	.00	.02	1	.00
11	.50	2	.00	.03	1	.00	.02	1	.00
12	.30	2	.00	.03	1	.00	.02	1	.00
13	3.0	6	.05	.03	1	.00	.01	0	.00
14	2.2	5	.03	2.5	3	.02	.01	0	.00
15	1.1	4	.01	24	16	2.0	.01	0	.00
16	.76	3	.00	7.3	4	.08	.01	0	.00
17	.57	3	.00	3.7	3	.03	.01	0	.00
18	.41	2	.00	2.4	2	.01	.01	0	.00
19	.21	2	.00	11	10	.30	.01	0	.00
20	.12	1	.00	4.2	5	.06	.01	0	.00
21	.07	1	.00	2.2	3	.02	.01	0	.00
22	.04	1	.00	1.2	2	.00	.01	0	.00
23	.03	1	.00	.88	2	.00	.00	0	.00
24	.04	1	.00	.61	1	.00	.00	0	.00
25	.03	1	.00	.41	1	.00	.00	0	.00
26	.03	1	.00	.25	1	.00	.00	0	.00
27	.03	1	.00	.17	1	.00	.00	0	.00
28	.03	1	.00	.09	1	.00	.00	0	.00
29	.03	1	.00	.05	1	.00	.00	0	.00
30	.03	1	.00	---	---	---	.00	0	.00
31	.02	1	.00	---	---	---	.00	0	.00
TOTAL	96.71	---	7.98	76.10	---	3.04	6.99	---	0.34

16226200 NORTH HALAWA STREAM NEAR HONOLULU--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.00	0	.00	.41	2	.00	.00	0	.00
2	.00	0	.00	.25	2	.00	.00	0	.00
3	.00	0	.00	.12	1	.00	.00	0	.00
4	.00	0	.00	.07	1	.00	.00	0	.00
5	.00	0	.00	.05	1	.00	.00	0	.00
6	.00	0	.00	1.0	2	.00	.00	0	.00
7	.00	0	.00	.64	2	.00	.00	0	.00
8	.00	0	.00	.41	2	.00	.00	0	.00
9	.00	0	.00	.25	1	.00	.00	0	.00
10	.00	0	.00	.12	1	.00	.00	0	.00
11	.00	0	.00	.07	1	.00	.00	0	.00
12	.00	0	.00	.05	1	.00	.00	0	.00
13	.00	0	.00	.03	1	.00	.00	0	.00
14	.00	0	.00	.03	1	.00	.00	0	.00
15	.00	0	.00	.03	1	.00	.00	0	.00
16	.00	0	.00	.03	1	.00	.00	0	.00
17	.00	0	.00	.03	1	.00	.00	0	.00
18	.00	0	.00	.02	0	.00	.00	0	.00
19	30	33	8.7	.02	0	.00	.00	0	.00
20	32	15	1.9	.02	0	.00	.00	0	.00
21	12	10	.32	.01	0	.00	.00	0	.00
22	4.7	4	.05	.01	0	.00	.00	0	.00
23	1.9	2	.01	.02	1	.00	.00	0	.00
24	1.0	2	.00	.02	1	.00	.00	0	.00
25	1.0	2	.00	.01	0	.00	.00	0	.00
26	2.2	3	.02	.01	0	.00	.00	0	.00
27	3.0	3	.02	.01	0	.00	.00	0	.00
28	1.5	2	.00	.01	0	.00	.00	0	.00
29	1.0	2	.00	.01	0	.00	.00	0	.00
30	.64	2	.00	.01	0	.00	.00	0	.00
31	---	---	---	.00	0	.00	---	---	---
TOTAL	90.94	---	11.02	3.77	---	0.00	0.00	---	0.00
		JULY			AUGUST			SEPTEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	.00	0	.00	---	---	---
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00
YEAR	524.83		30.92						

16229000 KALIHI STREAM NEAR HONOLULU

LOCATION.--Lat 21°22'00", long 157°50'49", Hydrologic Unit 20060000, on right bank 1.9 mi upstream from Kamanaiki Stream and 4.1 mi north of Honolulu Post Office.

DRAINAGE AREA.--2.61 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1913 to April 1914, July 1914 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1569: Drainage area. WSP 1719: 1921-22(M), 1923-24, 1925-26(M), 1927-28, 1929-32(M), 1935, 1937, 1938-39(M), 1943(M), 1948-52(P), 1955-56, 1957-58(M), 1959.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 464.40 ft above mean sea level. Prior to Oct. 12, 1923, at datum 2.00 ft lower.

REMARKS.--Records good except for period of no gage-height record, which are poor.

AVERAGE DISCHARGE.--70 years (water years 1915-84), 6.68 ft^3/s (4,840 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 12,400 ft^3/s Nov. 18, 1930, gage height, 13.81 ft, from rating curve extended above 280 ft^3/s on basis of indirect measurements at gage heights 8.9 ft, 10.96 ft, and 11.27 ft; minimum, 0.09 ft^3/s Oct. 22, 1933, July 29, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 218 ft^3/s Jan. 5, gage height, 5.25 ft, no peak above base of 700 ft^3/s; minimum, 0.17 ft^3/s several days in September.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	2.4	1.9	1.0	4.6	2.0	2.3	1.5	1.4	.57	.46	.28
2	2.8	2.2	1.6	1.0	6.1	6.8	1.3	1.5	1.0	.57	.41	.28
3	2.8	2.0	1.5	1.0	2.8	2.2	1.1	1.5	.91	.73	.73	.28
4	3.0	3.0	1.5	1.0	2.3	1.8	.91	1.5	1.0	.65	.82	.33
5	4.6	4.0	1.5	35	2.2	1.6	.82	1.5	1.0	.57	.57	.33
6	2.8	3.6	1.5	9.0	1.8	1.5	.91	2.2	.91	.57	.46	.33
7	2.3	2.4	1.4	3.5	2.3	1.4	.82	1.4	.91	.50	.41	.33
8	1.9	2.3	1.5	2.5	2.0	1.4	.91	1.6	1.0	.50	.36	.41
9	1.8	1.9	4.2	2.1	1.6	1.4	.91	1.4	1.1	2.2	.36	.46
10	1.6	1.8	2.2	1.8	1.5	1.3	1.5	1.3	1.9	1.1	.41	.33
11	1.8	8.6	1.6	1.7	1.4	1.3	1.4	1.6	1.1	.65	.41	.28
12	1.8	32	1.5	1.9	1.3	1.3	1.1	1.6	.91	.50	.41	.23
13	2.6	12	1.9	3.8	1.8	1.3	1.6	1.4	1.0	.50	1.0	.20
14	2.2	5.6	1.6	3.0	6.4	1.2	1.2	1.3	.82	.50	.46	.23
15	1.8	4.2	1.5	2.5	26	1.2	1.1	1.4	1.1	.50	.36	.73
16	1.5	3.8	1.4	2.0	6.2	1.2	1.2	1.3	1.4	.50	.36	.36
17	1.6	3.0	1.4	1.8	3.8	1.1	1.2	1.4	.91	.50	.33	.36
18	1.5	2.6	1.3	1.7	3.6	1.1	1.1	1.6	.82	.46	.33	.36
19	8.6	2.8	1.3	1.6	12	1.1	13	1.3	.73	.65	.33	.33
20	14	4.6	1.3	1.5	6.2	1.1	14	1.2	.65	.65	.28	.28
21	4.2	5.6	1.3	1.5	5.6	1.1	7.1	1.1	1.0	1.2	.28	.23
22	3.2	3.2	1.2	1.7	4.4	1.1	3.6	1.5	.73	.50	.28	.20
23	2.6	2.8	1.2	5.2	3.8	1.0	2.4	1.5	.65	.46	.41	.20
24	2.3	2.6	1.4	3.5	3.6	1.0	2.2	1.4	.73	.46	.36	.20
25	2.8	2.3	1.9	2.1	3.0	1.0	3.2	1.1	.65	.41	.33	.20
26	2.8	2.2	2.0	2.9	2.6	1.0	3.5	1.1	.82	.36	.36	.28
27	4.3	1.9	1.3	2.5	2.0	1.1	2.8	1.0	.57	.36	.73	.23
28	2.4	1.9	1.2	2.0	1.8	1.6	2.0	.91	.65	.36	.36	.33
29	2.2	2.3	1.2	2.1	1.8	1.1	1.8	1.2	.73	.36	.36	.23
30	4.0	1.9	1.1	1.7	---	1.0	1.6	1.2	.57	.36	.36	.23
31	2.3	---	1.1	2.8	---	1.1	---	1.1	---	.50	.28	---
TOTAL	98.1	131.5	48.5	107.4	124.5	45.4	78.58	42.61	27.67	18.70	13.37	9.05
MEAN	3.16	4.38	1.56	3.46	4.29	1.46	2.62	1.37	.92	.60	.43	.30
MAX	14	32	4.2	35	26	6.8	14	2.2	1.9	2.2	1.0	.73
MIN	1.5	1.8	1.1	1.0	1.3	1.0	.82	.91	.57	.36	.28	.20
AC-FT	195	261	96	213	247	90	156	85	55	37	27	18

CAL YR 1983 TOTAL 904.25 MEAN 2.48 MAX 32 MIN .57 AC-FT 1790
WTR YR 1984 TOTAL 745.38 MEAN 2.04 MAX 35 MIN .20 AC-FT 1480

NOTE.--No gage-height record Dec. 28 to Jan. 30.

16229000 KALIHI STREAM NEAR HONOLULU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972, 1974 to current year.

REMARKS.--Miscellaneous chemical analyses published for this station for 1969, 1973 water years.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	STREAM-FLOW INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT					
27...	1145	3.7	145	7.6	20.5
NOV					
28...	0945	1.0	145	7.3	20.0
DEC					
28...	1010	1.1	140	7.4	20.5
FEB					
27...	1200	1.9	145	7.4	20.5
MAR					
07...	1100	1.4	140	7.0	18.5
APR					
26...	1100	2.3	135	7.2	21.0
MAY					
29...	1045	1.3	150	7.2	21.5
AUG					
28...	1030	.34	170	7.4	23.0
SEP					
12...	0930	.29	180	7.2	22.5
25...	1130	.22	180	7.3	23.0

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
NOV										
28...	0945	33	9	5.4	4.7	13	46	1	.80	24
FEB										
27...	1200	34	2	5.6	4.9	14	46	1	.90	32
MAY										
29...	1045	39	3	6.8	5.3	13	41	.9	1.4	36
AUG										
28...	1030	46	4	7.4	6.8	15	41	1	1.1	43

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
NOV									
28...	5.9	19	<.10	12	75	.10	2.2	140	11
FEB									
27...	6.2	20	<.10	13	84	.11	.47	200	10
MAY									
29...	6.9	19	<.10	13	87	.12	<.10	320	15
AUG									
28...	8.0	21	<.10	14	99	.13	<.10	360	25

< Actual value is known to be less than the value shown.

16229300 KALIHI STREAM AT KALIHI

(National stream-quality accounting network station)

LOCATION.--Lat 21°20'29", long 157°52'36", Hydrologic Unit 20060000, on right bank at Kalihi, 0.4 mi northwest of Bishop Museum, and 2.4 mi northwest of Honolulu Post Office.

DRAINAGE AREA.--5.18 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Water year 1962 (annual maximum), July 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 70 ft, from topographic map. Aug. 28, 1961, to June 30, 1962, crest-stage gage at site 600 ft downstream at different datum.

REMARKS.--Records fair. No diversion above station. Recording rain gage located at station.

AVERAGE DISCHARGE.--22 years, 10.7 ft³/s (7,750 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,110 ft³/s Apr. 19, 1974, gage height, 9.98 ft from rating curve extended above 180 ft³/s on basis of slope-area measurement at gage height 9.98 ft; minimum, 0.16 ft³/s June 24, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 14, 1960, reached a stage of 8.0 ft from floodmarks, present site and datum, discharge, 6,350 ft³/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 258 ft³/s Jan. 5, gage height, 2.27 ft, no peak above base of 1,600 ft³/s; minimum, 0.32 ft³/s Sept. 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	3.4	2.3	1.5	5.1	2.7	7.0	2.3	2.9	.94	.84	.44
2	4.0	3.3	2.2	1.4	10	13	2.2	2.5	1.5	1.3	.94	.44
3	4.5	3.2	2.2	1.5	3.5	2.9	1.5	2.2	1.4	1.3	2.0	.37
4	3.9	5.0	2.2	1.5	2.9	2.5	1.3	2.3	1.3	1.2	1.8	.51
5	5.2	6.1	2.2	57	2.5	2.2	1.3	2.7	1.4	1.2	.94	.58
6	3.8	5.1	2.0	9.5	2.3	2.2	1.8	3.2	1.3	1.2	.66	.58
7	3.5	3.5	2.0	4.1	2.9	2.0	1.3	2.2	1.2	.75	.66	.58
8	2.9	3.1	2.0	3.1	3.6	2.0	1.7	2.3	1.3	.75	.66	.94
9	2.5	3.1	3.6	2.7	2.9	2.0	1.8	2.2	1.5	2.4	.66	.84
10	2.3	2.5	3.2	2.3	2.5	2.0	6.0	1.8	2.5	2.0	.84	.94
11	2.5	5.2	2.2	2.2	2.3	1.8	2.7	1.7	1.5	1.4	.94	.51
12	2.2	55	2.2	2.3	2.2	1.5	1.7	2.5	1.4	.98	1.0	.44
13	3.3	21	2.2	5.6	2.2	1.5	2.9	1.8	1.5	.75	1.4	.51
14	2.7	8.5	2.2	3.5	8.2	1.5	2.9	1.7	1.2	.66	.75	.51
15	2.3	5.4	1.8	2.7	39	1.5	2.0	1.8	2.3	.80	.58	1.3
16	2.2	4.4	1.8	2.3	10	1.5	1.7	1.7	3.2	.84	.58	.84
17	2.2	3.6	1.7	2.5	5.2	1.3	1.7	2.2	1.4	1.4	.51	.66
18	2.0	3.3	1.7	2.2	5.2	1.4	1.7	2.5	1.2	.94	.58	.75
19	12	3.7	1.7	2.2	20	1.5	11	2.0	1.2	1.5	.51	.58
20	21	5.1	1.5	2.0	6.9	1.4	54	1.8	1.2	3.7	.51	.51
21	5.6	6.1	1.5	2.0	4.3	1.3	13	1.7	2.2	2.0	.51	.44
22	4.0	3.6	1.5	2.3	3.4	1.3	5.7	2.5	1.4	1.0	.58	.51
23	3.4	3.4	1.7	7.9	3.7	1.3	3.5	2.9	1.2	.84	.58	.51
24	3.1	2.9	2.3	4.0	2.9	1.3	2.9	1.8	1.4	1.4	.66	.37
25	4.3	2.9	4.2	2.7	2.7	1.2	7.0	1.5	1.0	.66	.66	.37
26	4.6	2.7	3.1	4.9	2.5	1.2	13	1.5	1.4	.58	1.0	.51
27	14	2.7	1.8	3.6	2.3	2.3	4.5	1.5	1.2	.58	1.5	.75
28	4.2	2.5	2.2	2.7	2.3	7.5	2.9	1.4	.94	.66	.66	1.2
29	3.1	2.9	2.2	2.7	2.2	2.0	2.9	2.7	1.2	.58	.75	.84
30	7.1	2.3	1.5	2.3	---	1.5	2.5	2.2	1.2	.51	.75	.75
31	3.5	---	1.7	3.4	---	1.5	---	1.4	---	1.3	.66	---
TOTAL	147.7	165.5	66.6	150.6	165.7	70.8	166.1	64.5	45.54	36.12	25.67	19.08
MEAN	4.76	6.18	2.15	4.86	5.71	2.28	5.54	2.08	1.52	1.17	.83	.64
MAX	21	55	4.2	57	39	13	54	3.2	3.2	3.7	2.0	1.3
MIN	2.0	2.3	1.5	1.4	2.2	1.2	1.3	1.4	.94	.51	.51	.37
AC-FT	293	368	132	299	329	140	329	128	90	72	51	38

CAL YR 1983 TOTAL 1286.49 MEAN 3.52 MAX 55 MIN .81 AC-FT 2550
WTR YR 1984 TOTAL 1143.91 MEAN 3.13 MAX 57 MIN .37 AC-FT 2270

16229300 KALIHI STREAM AT KALIHI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970-74, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO- METRIC PRES- SURE (MM OF HG)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT												
11...	1440	--	2.9	220	7.3	22.5	--	--	--	--	--	--
17...	1140	764	1.8	219	7.6	23.5	1.9	7.7	91	K7100	2800	62
NOV												
30...	1405	--	2.4	220	7.6	23.5	--	--	--	--	--	--
JAN												
16...	1515	--	2.5	210	7.7	22.5	--	--	--	--	--	--
FEB												
21...	1100	764	4.5	240	7.1	21.0	5.2	8.1	91	3900	16000	60
MAR												
07...	1010	--	2.0	240	7.0	19.5	--	--	--	--	--	--
APR												
12...	1055	--	1.8	300	7.5	23.0	--	--	--	--	--	--
30...	1100	768	2.0	270	7.6	22.5	2.1	7.4	85	3200	4700	73
JUN												
01...	1100	--	3.1	220	7.5	23.5	--	--	--	--	--	--
AUG												
01...	1045	--	.86	290	7.5	24.5	--	--	--	--	--	--
27...	1120	766	1.7	310	7.5	25.0	2.3	5.9	71	12000	10000	86
SEP												
06...	1200	--	.47	360	7.5	25.5	--	--	--	--	--	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT											
17...	4	12	7.7	20	41	1	1.3	58	8.5	28	<.10
FEB											
21...	3	12	7.2	19	40	1	1.1	57	9.9	28	<.10
APR											
30...	2	14	9.2	24	41	1	1.1	71	10	34	<.10
AUG											
27...	1	18	10	28	41	1	1.9	85	12	38	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
OCT											
17...	15	116	130	.16	.14	.030	.80	.030	.050	.020	30
FEB											
21...	16	117	130	.16	.17	.030	.80	.080	.040	.050	60
APR											
30...	15	162	150	.22	--	--	.20	.070	--	--	10
AUG											
27...	18	156	180	.21	.11	.050	.30	.080	.050	.050	20

K Results based on colony count outside the acceptable range (non-ideal colony count).
< Actual value is known to be less than the value shown.

16229300 KALIHI STREAM AT KALIHI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT											
17...	<1	10	<.5	<1	<1	<3	2	170	<1	<4	14
FEB											
21...	1	9	.5	<1	<1	<3	3	160	1	5	12
APR											
30...	<1	12	<.5	<1	<1	<3	4	170	4	6	30
AUG											
27...	<1	14	<1	<1	<1	<3	3	170	7	4	18

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
17...	.1	<10	2	<1	<1	99	<6	11	5	.02	100
FEB											
21...	<.1	<10	<1	<1	<1	88	<6	11	5	.06	100
APR											
30...	<.1	<10	4	<1	<1	120	<6	17	3	.02	100
AUG											
27...	<.1	<10	3	<1	2	160	<6	10	4	.02	100

< Actual value is known to be less than the value shown.

[illegible] AVAILABLE

16232000 NUUANU STREAM BELOW RESERVOIR 2 WASTEWAY, NEAR HONOLULU

LOCATION.--Lat 21°20'57", long 157°49'40", Hydrologic Unit 20060000, on right bank beside Old Pali Road in upper Nuuanu Valley, 0.2 mi downstream from reservoir 2 wasteway, and 3.5 mi northeast of Honolulu Post Office.

DRAINAGE AREA.--3.35 mi^2.

PERIOD OF RECORD.--October 1913 to January 1921. September 1921 to current year.

REVISED RECORDS.--WSP 985: 1921-35(M). WSP 1319: 1931. WSP 1569: Drainage area. WSP 1639: 1931, 1935.

GAGE.--Water-stage recorder and sharp-crested weirs. Datum of gage is 631.71 ft above mean sea level. Prior to Sept. 7, 1915, nonrecording gage at same site at datum 0.03 ft lower and Sept. 7, 1915, to Mar. 31, 1918, at same datum.

REMARKS.--Records good. Low-flow regulation by reservoirs 2, 3, and 4, capacities, 21 acre-ft, 34 acre-ft, and 1,630 acre-ft, respectively. Honolulu Board of Water Supply diverts ground water from tunnels in drainage area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--68 years (water years 1915-16, 1918-20, 1922-84), 7.03 ft^3/s (5,090 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft^3/s Jan. 16, 1921, gage height, 8.74 ft, from floodmarks, from rating curve extended above 420 ft^3/s by test of model of station site; minimum, 0.09 ft^3/s Sept. 10, 11, 1925.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 99 ft^3/s Jan. 5, gage height, 2.17 ft, no peak above base of 240 ft^3/s; minimum, 0.31 ft^3/s, several days in September.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.5	2.2	1.6	2.2	2.1	2.0	1.5	1.2	.83	.62	.48
2	2.3	2.3	2.3	1.6	3.7	5.4	1.3	1.5	1.0	.83	.64	.52
3	2.5	2.3	2.2	1.6	1.9	2.2	1.3	1.6	.94	.88	.70	.48
4	2.5	2.6	2.2	1.6	1.8	2.1	1.2	1.5	.88	.88	.85	.48
5	2.7	2.9	2.2	22	1.8	2.0	1.2	1.5	.93	1.0	.75	.52
6	2.9	2.6	2.2	3.1	1.8	2.0	1.4	1.5	.93	1.0	.72	.53
7	2.3	2.5	2.1	2.0	2.2	1.9	1.3	1.5	.91	.83	.67	.46
8	2.2	2.1	2.1	1.8	2.2	1.8	1.4	1.8	.88	.83	.66	.48
9	2.1	2.0	2.3	1.6	2.1	1.8	1.4	1.5	1.0	1.8	.66	.48
10	2.1	2.2	2.2	1.6	1.8	1.8	2.0	1.5	1.2	1.0	.67	.44
11	2.2	4.0	2.1	1.8	1.8	1.8	1.4	1.3	.96	.88	.61	.34
12	2.2	20	2.1	1.9	1.8	1.9	1.3	1.5	.89	.83	.67	.34
13	2.5	7.6	2.2	2.6	1.8	1.9	1.3	1.3	.91	.83	.72	.34
14	2.0	3.4	1.7	2.1	4.5	1.5	1.4	1.5	.86	.77	.67	.43
15	2.0	3.1	2.0	1.9	17	1.6	1.3	1.5	.98	.77	.67	.72
16	2.0	2.9	2.0	1.9	4.2	1.6	1.2	1.5	1.2	.77	.72	.38
17	2.0	2.7	2.0	1.8	2.3	1.5	1.2	1.3	.94	.83	.72	.38
18	2.0	2.7	1.9	1.7	2.6	1.5	1.2	1.2	.88	.67	.78	.43
19	6.2	2.8	1.9	1.7	7.2	1.5	4.2	1.3	.83	.72	.92	.34
20	7.7	4.5	1.9	1.7	2.6	1.5	7.3	1.2	.77	.87	.86	.31
21	2.8	3.4	1.9	1.7	2.4	1.5	3.1	1.2	1.0	.83	.61	.31
22	2.6	2.8	2.0	1.7	2.4	1.5	2.0	1.4	.94	.67	.72	.31
23	2.5	2.8	1.6	2.1	2.6	1.5	1.7	1.5	.86	.61	.88	.31
24	2.1	2.7	2.0	2.0	2.3	1.5	1.9	1.3	.94	.77	.83	.31
25	2.5	2.7	2.6	1.9	2.2	1.5	2.8	1.3	.88	.67	.83	.31
26	2.5	2.5	2.4	2.1	2.3	1.5	2.2	1.3	.88	.61	.70	.34
27	3.2	2.5	1.6	1.9	2.2	1.2	1.8	1.3	.83	.61	.72	.31
28	2.6	2.5	1.9	1.8	2.1	1.8	1.6	1.3	.77	.61	.52	.34
29	2.3	2.6	1.8	1.8	2.1	1.5	1.7	1.2	.83	.61	.52	.31
30	3.1	2.1	1.7	1.7	---	1.5	1.5	1.0	.83	.61	.48	.34
31	2.5	---	1.7	2.1	---	1.5	---	.99	---	.75	.48	---
TOTAL	83.6	104.3	63.0	78.4	87.9	55.9	56.6	42.79	27.87	25.17	21.57	12.07
MEAN	2.70	3.48	2.03	2.53	3.03	1.80	1.89	1.38	.93	.81	.70	.40
MAX	7.7	20	2.6	22	17	5.4	7.3	1.8	1.2	1.8	.92	.72
MIN	2.0	2.0	1.6	1.6	1.8	1.2	1.2	.99	.77	.61	.48	.31
AC-FT	166	207	125	156	174	111	112	85	55	50	43	24

CAL YR 1983 TOTAL 913.2 MEAN 2.50 MAX 20 MIN 1.0 AC-FT 1810
WTR YR 1984 TOTAL 659.17 MEAN 1.80 MAX 22 MIN .31 AC-FT 1310

AVAILABLE

16240500 WAIAKEAKUA STREAM AT HONOLULU

LOCATION.--Lat 21°19'53", long 157°48'12", Hydrologic Unit 20060000, on right bank 5 ft downstream from bridge on Waaloa Way, 500 ft upstream from confluence with Waihi Stream, and 4.2 mi northeast of Honolulu Post Office.

DRAINAGE AREA.--1.06 mi^2.

PERIOD OF RECORD.--May 1913 to January 1921, August 1925 to current year. Prior to July 1960, published as East Branch Manoa Stream near Honolulu.

REVISED RECORDS.--WSP 1319: 1919(M), 1930-33(M). WSP 1569: Drainage area. WSP 1937: 1949(M), 1960(M).

GAGE.--Water-stage recorder and combination Parshall flume and concrete weir. Datum of gage is 294.50 ft above mean sea level (Honolulu Board of Water Supply bench mark). Prior to May 20, 1914, nonrecording gage at site 200 ft upstream at different datum. May 20, 1914, to Jan. 16, 1921, water-stage recorder at site 30 ft upstream at different datum. Aug. 18, 1925, to Mar. 15, 1928, water-stage recorder at present site at datum 2.99 ft lower, and Mar. 16, 1928, to Oct. 16, 1933, at datum 0.41 ft higher than present datum.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Honolulu Board of Water Supply at times diverts a small amount of ground water from tunnel above station. Occasional small diversions for irrigation above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--66 years (water years 1914-20, 1926-84), 5.06 ft^3/s (3,670 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft^3/s Jan. 16, 1921, gage height, 10.4 ft, from floodmarks, site and datum then in use, from rating curve extended above 58 ft^3/s. Current peak discharges are derived from rating curve extended above 1,760 ft^3/s on the basis of slope-area measurement at gage height 5.28 ft; minimum, 0.6 ft^3/s June 7, 8, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 207 ft^3/s Apr. 19, gage height, 2.83 ft, no peak above base of 310 ft^3/s; minimum, 1.0 ft^3/s Sept. 12, 21-24, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	4.9	3.0	2.3	3.8	2.6	2.8	2.6	2.0	1.7	1.7	1.2
2	3.7	3.9	2.9	2.2	5.0	8.6	2.3	2.5	1.9	1.8	1.5	1.2
3	3.5	3.7	2.8	2.1	2.8	3.0	2.1	2.6	2.0	3.5	1.5	1.2
4	4.0	8.3	2.8	2.1	2.5	2.8	2.1	2.7	1.9	2.4	1.8	1.2
5	5.8	10	2.8	23	2.4	2.6	2.0	2.8	1.8	3.5	1.6	1.5
6	3.7	7.3	2.7	4.1	2.2	2.5	2.9	2.9	1.8	2.1	1.5	1.2
7	3.1	4.2	2.7	3.1	3.2	2.5	2.4	2.4	1.8	1.8	1.4	1.2
8	2.8	3.6	2.7	2.8	3.0	2.6	2.6	2.7	1.8	1.9	1.4	1.6
9	2.7	3.3	4.3	2.6	3.1	2.6	2.5	2.3	2.1	6.7	1.3	1.2
10	2.7	3.2	3.0	2.5	2.5	2.5	3.2	2.2	3.6	2.9	1.3	1.2
11	3.0	11	2.7	2.5	2.4	2.5	2.7	2.3	2.4	2.2	1.3	1.2
12	2.8	28	2.7	2.6	2.4	2.5	2.6	2.4	2.0	1.9	1.3	1.1
13	3.3	10	3.2	8.6	3.0	2.4	3.1	2.2	1.9	1.8	1.3	1.2
14	3.0	5.3	2.7	3.6	9.1	2.4	2.7	2.1	1.8	1.7	1.3	1.1
15	3.1	4.6	2.6	3.0	21	2.4	2.4	2.3	2.1	1.7	1.2	2.9
16	2.8	4.3	2.6	2.7	5.5	2.3	2.2	2.1	2.8	1.7	1.2	1.5
17	2.8	4.0	2.5	2.6	3.8	2.3	2.3	2.8	2.1	1.7	1.2	1.3
18	2.9	3.8	2.5	2.5	9.7	2.4	2.1	2.7	1.9	1.7	1.2	1.6
19	15	3.7	2.5	2.4	15	2.3	22	2.4	1.9	1.8	1.2	1.3
20	13	6.4	2.4	2.5	4.6	2.2	14	2.3	1.7	1.9	1.2	1.2
21	4.2	7.1	2.4	2.5	3.8	2.2	4.4	2.1	1.8	2.0	1.2	1.0
22	3.8	3.9	2.3	2.5	3.3	2.1	3.3	2.7	1.7	1.7	1.2	1.0
23	3.6	3.7	2.2	3.1	3.8	2.1	2.9	2.4	2.0	1.6	1.2	1.0
24	3.3	3.5	2.5	2.8	3.2	2.1	2.9	2.2	2.1	1.9	1.2	1.1
25	4.9	3.4	8.4	2.7	3.2	2.1	5.8	2.1	1.8	1.6	1.2	1.2
26	4.5	3.2	3.9	3.0	3.1	2.1	4.7	2.1	1.9	1.5	1.2	1.1
27	4.6	3.2	2.7	3.6	2.8	2.2	3.6	2.0	1.7	1.5	1.2	1.1
28	3.5	3.1	2.7	2.8	2.7	3.0	2.9	2.0	1.9	1.5	1.2	1.2
29	3.2	3.4	2.6	2.7	2.7	2.7	2.7	2.1	2.0	1.4	1.2	1.2
30	8.8	3.0	2.4	2.7	---	2.4	2.6	2.1	1.8	1.4	1.2	1.1
31	4.3	---	2.4	4.2	---	2.2	---	2.0	---	1.6	1.2	---
TOTAL	136.7	171.0	90.6	112.4	135.6	81.2	116.8	73.1	60.0	64.1	40.6	38.1
MEAN	4.41	5.70	2.92	3.63	4.68	2.62	3.89	2.36	2.00	2.07	1.31	1.27
MAX	15	28	8.4	23	21	8.6	22	2.9	3.6	6.7	1.8	2.9
MIN	2.7	3.0	2.2	2.1	2.2	2.1	2.0	2.0	1.7	1.4	1.2	1.0
AC-FT	271	339	180	223	269	161	232	145	119	127	81	76

CAL YR 1983 TOTAL 1452.4 MEAN 3.98 MAX 28 MIN 2.2 AC-FT 2880
WTR YR 1984 TOTAL 1120.2 MEAN 3.06 MAX 28 MIN 1.0 AC-FT 2220

NOTE.--No gage-height record Aug. 9 to Sept. 11.

16254000 MAKAWAO STREAM NEAR KAILUA

LOCATION.--Lat 21°21'49", long 157°46'02", Hydrologic Unit 20060000, on left bank 650 ft upstream from mouth, 2.7 mi southwest of Kailua, and 4.3 mi southeast of Kaneohe Courthouse.

DRAINAGE AREA.--2.04 mi^2.

PERIOD OF RECORD.--November 1912 to June 1916, January 1958 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 80 ft, from topographic map. Prior to Jan. 1, 1958, nonrecording gage at sites about 200 ft upstream at different datums.

REMARKS.--Records good. Maunawili ditch diverts 1.5 mi above station for irrigation in vicinity of Waimanalo. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--28 years (water years 1914-15, 1959-84), 5.04 ft^3/s (3,650 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,000 ft^3/s Feb. 4, 1965, gage height, 12.41 ft, from rating curve extended above 470 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.43 ft^3/s Sept. 8-12, 14, 16-20, 22, 23, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 178 ft^3/s Mar. 2, gage height, 3.85 ft, no peak above base of 390 ft^3/s; minimum, 0.76 ft^3/s Sept. 14, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.1	1.8	2.0	2.7	2.4	2.1	2.6	1.7	1.6	1.3	1.1
2	2.2	1.9	1.8	2.0	4.8	18	2.2	2.5	1.7	1.6	1.2	1.1
3	2.2	2.0	1.7	1.9	2.4	3.1	2.2	2.4	1.6	1.8	1.2	1.1
4	2.2	2.1	1.7	1.9	2.3	2.8	2.1	2.4	1.6	1.5	1.2	1.1
5	2.6	2.4	1.6	7.3	2.2	2.6	2.1	2.3	1.6	1.5	1.2	1.2
6	2.2	2.1	1.6	2.7	2.2	2.5	2.5	2.4	1.6	1.4	1.1	1.1
7	2.1	2.0	1.7	2.2	2.9	2.4	2.4	2.3	1.6	1.4	1.2	1.1
8	2.1	1.9	1.7	2.1	2.3	2.2	2.9	2.3	1.6	1.6	1.2	1.2
9	2.1	1.9	2.1	2.1	2.2	2.2	3.1	2.2	1.5	2.1	1.2	1.2
10	2.1	1.9	1.8	2.0	2.2	2.2	2.5	2.1	1.8	2.1	1.3	1.2
11	2.1	2.5	2.0	1.9	2.2	2.2	1.8	2.6	1.6	1.7	1.3	1.2
12	1.8	3.9	1.8	1.9	2.1	2.1	1.8	2.1	1.5	1.4	1.3	1.1
13	1.6	3.5	5.0	8.4	2.5	2.1	1.9	1.9	1.6	1.4	1.3	1.1
14	1.6	2.9	2.3	7.5	6.4	2.1	1.8	1.9	1.6	1.4	1.1	.92
15	1.6	2.3	2.0	4.0	6.1	2.1	1.8	1.9	1.6	1.4	1.1	1.2
16	1.5	2.0	1.8	3.4	3.0	2.1	1.7	1.8	1.7	1.4	1.1	.97
17	1.6	1.9	1.8	3.2	2.6	2.0	1.8	1.9	1.5	1.4	1.1	1.1
18	1.6	1.9	1.7	2.9	3.5	2.0	1.7	1.9	1.5	1.4	1.1	1.3
19	2.3	1.9	1.7	2.8	11	2.0	6.0	1.8	1.5	1.4	1.2	1.1
20	2.5	2.0	1.7	2.8	3.8	2.0	3.2	1.8	1.5	1.6	1.1	1.1
21	1.9	2.0	1.6	2.5	3.5	1.9	2.3	1.8	1.6	1.8	1.2	.96
22	1.9	1.9	1.6	2.4	3.5	1.9	2.2	1.9	1.5	1.4	1.2	.88
23	1.8	1.9	1.6	2.3	4.1	1.9	2.1	1.8	1.5	1.4	1.2	.92
24	1.8	1.9	2.4	2.3	3.3	1.9	2.1	1.8	1.6	1.4	1.2	.98
25	1.8	1.9	17	2.3	2.9	1.9	5.2	1.8	1.6	1.4	1.2	1.0
26	1.8	2.2	6.7	2.8	2.7	1.9	11	1.8	1.6	1.4	1.2	1.0
27	1.7	1.8	3.6	3.1	2.5	1.9	5.4	1.8	1.6	1.4	1.1	1.0
28	1.8	1.9	2.8	2.6	2.4	2.1	3.4	1.8	1.6	1.4	1.1	1.1
29	1.8	1.8	2.5	2.3	2.4	1.9	2.9	1.8	1.7	1.4	1.2	1.0
30	2.2	1.8	2.3	2.2	---	1.9	2.6	1.8	1.6	1.4	1.1	1.0
31	1.9	---	2.2	4.5	---	1.8	---	1.7	---	1.5	1.1	---
TOTAL	60.7	64.2	83.6	94.3	96.7	82.1	86.8	62.9	47.8	47.0	36.6	32.33
MEAN	1.96	2.14	2.70	3.04	3.33	2.65	2.89	2.03	1.59	1.52	1.18	1.08
MAX	2.6	3.9	17	8.4	11	18	11	2.6	1.8	2.1	1.3	1.3
MIN	1.5	1.8	1.6	1.9	2.1	1.8	1.7	1.7	1.5	1.4	1.1	.88
AC-FT	120	127	166	187	192	163	172	125	95	93	73	64

CAL YR 1983 TOTAL 1012.8 MEAN 2.77 MAX 17 MIN 1.4 AC-FT 2010
WTR YR 1984 TOTAL 795.03 MEAN 2.17 MAX 18 MIN .88 AC-FT 1580

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE

LOCATION.--Lat 21°23'22", long 157°47'44", Hydrologic Unit 20060000, on left bank 0.3 mi south of Hawaiian Memorial Park cemetery, 1.0 mi northwest of Pali Golf Course, and 1.3 mi south of Castle High School.

DRAINAGE AREA.--1.11 mi^2.

PERIOD OF RECORD.--February 1983 to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 210 ft, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2.1 ft^3/s, Apr. 19, 1984; minimum daily discharge, 0.10 ft^3/s for several days in September 1984.

DISCHARGE, IN CUBIC FEET PER SECOND, FEBRUARY TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					1.8	1.8	1.6	1.3	.81	1.2	.59	.56
2					1.8	1.8	1.6	1.2	.80	1.1	.60	.56
3					1.8	1.9	1.9	1.2	.80	1.0	1.2	.55
4					1.8	1.8	1.6	1.1	.80	.90	.80	.55
5					1.8	1.8	1.7	1.1	.81	.85	.60	.54
6					1.8	1.8	1.5	1.1	.82	.78	.60	.53
7					1.8	1.8	1.5	1.1	.83	.71	.61	.52
8					1.8	1.8	1.5	1.1	.84	.65	.61	.52
9					1.8	1.7	1.5	1.0	1.1	.61	.62	.51
10					1.8	1.7	1.5	1.0	.86	.60	.63	.51
11					1.8	1.7	1.5	1.2	.86	.60	.63	.50
12					1.8	1.7	1.5	1.1	.87	.63	.64	.50
13					1.7	1.7	1.5	1.3	.88	.66	.64	.49
14					1.7	1.7	1.5	1.1	.89	.67	.65	.49
15					1.7	1.7	1.5	1.0	.90	.67	.65	.48
16					1.7	1.7	1.4	.96	.90	.68	.66	.48
17					1.7	1.7	1.4	.98	.90	.68	.66	.48
18					1.7	1.7	1.4	.98	.91	.69	.66	.47
19					1.7	1.7	1.4	.99	.97	.70	.65	1.1
20					1.7	1.7	1.4	1.0	1.0	.68	.64	.47
21					1.7	1.7	1.4	2.0	1.1	.66	.64	.46
22					1.7	1.6	1.4	1.0	1.2	.74	.63	.46
23					1.7	1.6	1.4	.99	1.3	.64	.62	1.2
24					1.7	1.6	1.4	.98	1.3	.62	.61	.46
25					1.7	1.6	1.4	.98	1.3	.60	.60	.44
26					1.7	1.6	1.4	.97	1.3	.60	.60	.54
27					1.7	1.6	1.4	.95	1.3	.59	.59	.41
28					1.8	1.6	1.4	.90	1.3	.59	.58	.40
29					---	1.6	1.4	.86	1.2	.58	.57	.70
30					---	1.6	1.3	.83	1.2	.58	.57	.40
31					---	1.6	---	.81	---	.59	.56	---
TOTAL					48.9	52.6	44.3	33.08	30.05	21.85	19.91	16.28
MEAN					1.75	1.70	1.48	1.07	1.00	.70	.64	.54
MAX					1.8	1.9	1.9	2.0	1.3	1.2	1.2	1.2
MIN					1.7	1.6	1.3	.81	.80	.58	.56	.40
AC-FT					97	104	88	66	60	43	39	32

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	.38	.35	.51	.83	.40	.26	.31	.29	.23	.15	.11
2	.36	.38	.35	.50	1.3	1.1	.26	.31	.29	.23	.15	.11
3	.34	.38	.35	.49	.50	.50	.26	.31	.29	.26	.15	.11
4	.33	.38	.35	.48	.45	.45	.25	.45	.29	.23	.15	.11
5	.40	.38	.35	1.3	.43	.43	.25	.35	.29	.21	.15	.11
6	.32	.38	.35	.75	.42	.41	.25	.40	.29	.19	.14	.11
7	.32	.38	.35	.66	.42	.40	.25	.35	.29	.19	.14	.11
8	.32	.38	.34	.62	.41	.39	.24	.34	.29	.18	.14	.11
9	.32	.38	.34	.56	.40	.38	.24	.33	.29	.18	.14	.11
10	.32	.38	.50	.51	.39	.37	.24	.32	.29	.18	.14	.14
11	.47	.37	.39	.48	.38	.37	.24	.50	.29	.18	.14	.11
12	.45	.37	.36	.47	.38	.36	.24	.40	.29	.18	.14	.11
13	.45	.37	.35	1.1	.37	.35	.24	.34	.29	.18	.14	.11
14	.45	.37	.42	1.5	.50	.34	.23	.32	.29	.18	.14	.15
15	.45	.37	.35	1.1	.58	.33	.23	.31	.29	.18	.14	.12
16	.40	.36	.35	.80	.50	.33	.23	.31	.29	.18	.14	.12
17	.40	.36	.35	.56	.41	.32	.23	.31	.29	.18	.14	.12
18	.40	.36	.35	.50	.39	.32	.22	.30	.29	.18	.14	.12
19	.45	.36	.35	.48	.37	.32	2.1	.30	.28	.18	.14	.14
20	.47	.36	.35	.52	.35	.31	.69	.30	.28	.22	.13	.12
21	.44	.35	.35	.47	.34	.30	.53	.30	.28	.19	.13	.11
22	.40	.35	.35	.45	.33	.30	.47	.30	.28	.17	.13	.10
23	.40	.35	.35	.43	.32	.30	.46	.30	.27	.17	.19	.10
24	.40	.35	.60	.41	.32	.30	.44	.30	.26	.17	.13	.10
25	.40	.35	.70	.38	.31	.29	.52	.29	.25	.17	.12	.10
26	.39	.35	.58	.36	.30	.29	.45	.29	.25	.16	.12	.10
27	.39	.35	.56	.35	.30	.28	.38	.29	.24	.15	.12	.10
28	.39	.35	.66	.35	.30	.28	.35	.29	.24	.15	.12	.10
29	.39	.35	.60	.34	.48	.27	.32	.29	.23	.15	.11	.10
30	.39	.35	.56	.34	---	.27	.31	.29	.23	.15	.11	.10
31	.39	---	.52	.51	---	.26	---	.29	---	.15	.11	---
TOTAL	12.19	10.95	13.08	18.28	12.78	11.32	11.38	10.09	8.31	5.70	4.23	3.36
MEAN	.39	.36	.42	.59	.44	.37	.38	.33	.28	.18	.14	.11
MAX	.47	.38	.70	1.5	1.3	1.1	2.1	.50	.29	.26	.19	.15
MIN	.32	.35	.34	.34	.30	.26	.22	.29	.23	.15	.11	.10
AC-FT	24	22	26	36	25	22	23	20	16	11	8.4	6.7

WTR YR 1984 TOTAL 121.67 MEAN .33 MAX 2.1 MIN .10 AC-FT 241

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1983 to September 1984.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: February 1983 to September 1984.

INSTRUMENTATION.--Automatic pumping sediment sampler since February 1983.

REMARKS.--Water-quality samples were also collected at this site.

EXTREMES FOR PERIOD OF RECORD.--February 1983 to September 1984.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,230 mg/L Apr. 19, 1984; minimum daily mean, 3 mg/L for several days.
SEDIMENT DISCHARGE: Maximum daily, 19 tons Apr. 19, 1984; minimum daily, less than 0.01 ton for many days.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1983

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
FEB 02...	0945	758	1.8	196	5.9	22.5	.90	6.8	79	K37	54
APR 28...	1410	--	1.4	180	6.7	23.0	--	--	--	--	--
MAY 06...	1335	--	1.1	170	6.8	23.5	--	--	--	--	--
16...	1110	765	.96	194	5.9	25.0	3.0	6.9	83	>1200	--
27...	1145	756	.95	190	5.7	24.5	--	6.4	77	--	--
JUN 02...	1150	756	.80	193	5.8	26.0	--	6.3	78	--	--
15...	1325	--	.90	200	6.3	26.5	--	--	--	--	--
23...	1100	761	1.3	196	6.0	23.0	13	7.8	91	--	--
30...	1105	760	1.2	199	6.1	25.5	--	7.0	86	--	--
JUL 13...	1245	759	.66	210	6.3	26.0	4.7	6.9	86	--	--
AUG 17...	1000	761	.66	188	6.7	24.0	3.4	6.8	81	290	52
SEP 22...	1015	--	.46	220	6.6	25.0	--	--	--	--	--
28...	0915	761	.40	--	7.0	24.5	4.2	5.9	71	--	--

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB 02...	0	11	6.5	16	39	1	.90	54	7.0	19	<.10
AUG 17...	0	10	6.5	16	40	1	1.0	52	11	21	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
FEB 02...	18	112	110	.15	<1	.40	.70	1.1	.010	90	10
MAY 16...	--	--	--	--	26	.30	.50	.80	.050	--	--
JUN 23...	--	--	--	--	[illegible]	--	--	--	--	--	--
JUL 13...	--	--	--	--	2	.50	.50	1.0	.070	--	--
AUG 17...	22	114	120	.16	54	.60	.40	1.0	.060	1100	20
SEP 28...	--	--	--	--	10	.60	.30	.90	.020	--	--

< Actual value is known to be less than the value shown.
> Actual value is known to be greater than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1983

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
FEB 02...	<1	<1	<100	16	<10	<.5	<1	<1	<10	<1	2
AUG 17...	1	<1	<100	18	<10	.8	<1	<1	<10	<1	2

DATE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB 02...	<3	1	1	450	270	1	1	<10	9	100	98
AUG 17...	<3	5	2	2300	100	1	1	<10	4	90	37

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
FEB 02...	.1	<.1	<1	<10	5	3	<1	<1	<1	<1	66
AUG 17...	.8	<.1	<1	<10	16	4	<1	<1	<1	<1	64

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
FEB 02...	<6	40	33	1.8	<1	<.1	<.010	<.1	<.010	<.010	<.010
AUG 17...	<6	60	14	.50	3	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
FEB 02...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
AUG 17...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 02...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
AUG 17...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

16265600 RIGHT BRANCH OF KAMOOALII STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT											
09...	1005	--	.32	243	6.6	24.0	--	--	--	--	--
26...	1045	760	.39	207	6.7	24.0	2.5	7.5	89	140	57
JAN											
31...	1005	756	.33	228	6.7	23.0	2.3	6.6	78	70	72
APR											
23...	1345	761	.46	320	6.9	27.5	4.5	5.9	75	190	100
JUN											
18...	0945	760	.29	204	6.6	25.0	3.2	6.7	81	K800	68
AUG											
29...	1120	--	.11	220	6.9	25.0	--	--	--	--	--
SEP											
17...	1105	762	.12	160	6.2	25.5	36	5.4	66	9000	--

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT											
26...	5	11	7.2	18	40	1	1.2	52	15	19	<.10
JAN											
31...	6	16	7.8	17	33	.9	1.3	66	17	21	<.10
APR											
23...	10	20	13	24	33	1	1.4	94	39	18	<.10
JUN											
18...	8	15	7.5	16	33	.9	.90	60	10	16	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT											
26...	22	127	120	.17	10	.60	.80	1.4	.010	120	10
JAN											
31...	19	129	140	.18	<2	.50	<.20	--	.010	170	10
APR											
23...	20	187	190	.25	10	.60	<.20	--	.010	520	<10
JUN											
18...	23	128	120	.17	9	.50	.40	.90	.050	920	<10
SEP											
17...	--	--	--	--	21	.40	.30	.70	.100	--	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
OCT											
26...	<1	<1	100	16	<10	<.5	<1	<1	<10	<1	1
JAN											
31...	<1	<1	<100	14	<10	<.5	<1	<1	10	<1	1
APR											
23...	<1	<1	<100	12	<10	2	<1	<1	<10	1	1
JUN											
18...	<1	<1	<100	13	<10	<1	<1	<1	<10	<1	<1

K Result based on colony count outside the acceptable range (non-ideal colony count).
< Actual value is known to be less than the value shown.

16265600 RIGHT BRANCH OF KAMOOALII STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT											
26...	<3	4	1	1000	76	2	2	10	8	150	40
JAN											
31...	<3	4	4	520	110	<1	<1	<10	5	60	59
APR											
23...	<3	4	2	920	24	3	2	<10	5	40	27
JUN											
18...	<3	5	2	1700	35	<1	4	<10	<4	80	34

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)
OCT											
26...	.1	<.1	<1	<10	2	4	<1	1	<1	<1	69
JAN											
31...	<.1	<.1	<1	<10	8	2	<1	<1	<1	<1	81
APR											
23...	<.1	<.1	<1	<10	17	5	<1	<1	<1	<1	100
JUN											
18...	<.1	<.1	<1	<10	11	3	<1	<1	<1	<1	73

DATE	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
OCT											
26...	<6	40	16	.70	<1	<.1	<.010	<.1	<.010	<.010	<.010
JAN											
31...	<6	60	47	1.2	<1	<.1	<.010	<.1	<.010	<.010	<.010
APR											
23...	<6	50	42	.80	<1	<.1	<.010	<.1	<.010	<.010	<.010
JUN											
18...	<6	170	24	.60	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
OCT											
26...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
JAN											
31...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
APR											
23...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
JUN											
18...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT											
26...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JAN											
31...	<.01	<.01	<.10	<.1	<.01	<1	<.01	.01	<.01	<.01	<.01
APR											
23...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JUN											
18...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), FEBRUARY TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1				1.8	4	.02	1.8	4	.02
2				1.8	4	.02	1.8	5	.02
3				1.8	4	.02	1.9	14	.07
4				1.8	4	.02	1.8	5	.02
5				1.8	4	.02	1.8	4	.02
6				1.8	4	.02	1.8	3	.01
7				1.8	4	.02	1.8	4	.02
8				1.8	4	.02	1.8	4	.02
9				1.8	4	.02	1.7	8	.04
10				1.8	4	.02	1.7	7	.03
11				1.8	4	.02	1.7	7	.03
12				1.8	4	.02	1.7	11	.05
13				1.7	4	.02	1.7	6	.03
14				1.7	4	.02	1.7	14	.06
15				1.7	4	.02	1.7	11	.05
16				1.7	4	.02	1.7	16	.07
17				1.7	3	.01	1.7	13	.06
18				1.7	10	.05	1.7	12	.06
19				1.7	8	.04	1.7	13	.06
20				1.7	11	.05	1.7	11	.05
21				1.7	13	.06	1.7	11	.05
22				1.7	14	.06	1.6	10	.04
23				1.7	14	.06	1.6	10	.04
24				1.7	12	.06	1.6	12	.05
25				1.7	4	.02	1.6	11	.05
26				1.7	4	.02	1.6	11	.05
27				1.7	4	.02	1.6	11	.05
28				1.8	5	.02	1.6	13	.06
29				---	---	---	1.6	18	.08
30				---	---	---	1.6	10	.04
31				---	---	---	1.6	6	.03
TOTAL				48.9	---	0.79	52.6	---	1.33
		APRIL			MAY			JUNE	
1	1.6	5	.02	1.3	20	.07	.81	35	.08
2	1.6	5	.02	1.2	20	.06	.80	24	.05
3	1.9	13	.08	1.2	15	.05	.80	25	.05
4	1.6	10	.04	1.1	15	.04	.80	25	.05
5	1.7	11	.05	1.1	15	.04	.81	25	.05
6	1.5	10	.04	1.1	20	.06	.82	30	.07
7	1.5	8	.03	1.1	30	.09	.83	40	.09
8	1.5	6	.02	1.1	40	.12	.84	40	.09
9	1.5	7	.03	1.0	30	.08	1.1	50	.15
10	1.5	8	.03	1.0	35	.09	.86	50	.12
11	1.5	7	.03	1.2	70	.23	.86	50	.12
12	1.5	12	.05	1.1	41	.12	.87	50	.12
13	1.5	8	.03	1.3	20	.07	.88	100	.24
14	1.5	8	.03	1.1	35	.10	.89	150	.36
15	1.5	20	.08	1.0	35	.09	.90	162	.39
16	1.4	24	.09	.96	100	.26	.90	50	.12
17	1.4	15	.06	.98	35	.09	.90	20	.05
18	1.4	13	.05	.98	55	.15	.91	10	.02
19	1.4	10	.04	.99	45	.12	.97	5	.01
20	1.4	10	.04	1.0	45	.12	1.0	5	.01
21	1.4	42	.16	2.0	200	1.1	1.1	10	.03
22	1.4	50	.19	1.0	50	.14	1.2	15	.05
23	1.4	28	.11	.99	40	.11	1.3	15	.05
24	1.4	18	.07	.98	30	.08	1.3	15	.05
25	1.4	26	.10	.98	30	.08	1.3	15	.05
26	1.4	26	.10	.97	30	.08	1.3	15	.05
27	1.4	24	.09	.95	32	.08	1.3	10	.04
28	1.4	21	.08	.90	30	.07	1.3	5	.02
29	1.4	50	.19	.86	30	.07	1.2	4	.01
30	1.3	25	.09	.83	30	.07	1.2	5	.02
31	---	---	---	.81	30	.07	---	---	---
TOTAL	44.3	---	2.04	33.08	---	4.00	30.05	---	2.61

16265600 RIGHT BRANCH KAHOOALII STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), FEBRUARY TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	1.2	5	.02	.59	5	.00	.56	5	.00
2	1.1	6	.02	.60	6	.00	.56	5	.00
3	1.0	7	.02	1.2	30	.10	.55	5	.00
4	.90	7	.02	.80	10	.02	.55	11	.02
5	.85	7	.02	.60	7	.01	.54	4	.00
6	.78	8	.02	.60	5	.00	.53	6	.00
7	.71	9	.02	.61	5	.00	.52	9	.01
8	.65	10	.02	.61	7	.01	.52	27	.04
9	.61	18	.03	.62	7	.01	.51	10	.01
10	.60	10	.02	.63	6	.01	.51	10	.01
11	.60	9	.01	.63	5	.00	.50	9	.01
12	.63	8	.01	.64	7	.01	.50	6	.00
13	.66	10	.02	.64	6	.01	.49	7	.00
14	.67	10	.02	.65	7	.01	.49	6	.00
15	.67	12	.02	.65	6	.01	.48	7	.00
16	.68	15	.03	.66	8	.01	.48	7	.00
17	.68	10	.02	.66	15	.03	.48	4	.00
18	.69	12	.02	.66	8	.01	.47	6	.00
19	.70	9	.02	.65	6	.01	1.1	70	.21
20	.68	7	.01	.64	9	.02	.47	6	.00
21	.66	10	.02	.64	5	.00	.46	11	.01
22	.74	8	.02	.63	5	.00	.46	8	.00
23	.64	8	.01	.62	8	.01	1.2	91	.56
24	.62	10	.02	.61	7	.01	.46	29	.04
25	.60	6	.00	.60	5	.00	.44	10	.01
26	.60	6	.00	.60	6	.00	.54	21	.03
27	.59	10	.02	.59	6	.00	.41	8	.00
28	.59	7	.01	.58	6	.00	.40	7	.00
29	.58	5	.00	.57	6	.00	.70	24	.14
30	.58	7	.01	.57	5	.00	.40	8	.00
31	.59	6	.00	.56	5	.00	---	---	---
TOTAL	21.85	---	0.50	19.91	---	0.30	16.28	---	1.10
YEAR	266.97		12.67						

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

		OCTOBER			NOVEMBER			DECEMBER	
1	.39	9	.00	.38	8	.00	.35	4	.00
2	.36	6	.00	.38	8	.00	.35	5	.00
3	.34	14	.01	.38	6	.00	.35	13	.01
4	.33	22	.02	.38	10	.01	.35	4	.00
5	.40	18	.02	.38	9	.00	.35	3	.00
6	.32	11	.00	.38	7	.00	.35	3	.00
7	.32	12	.01	.38	6	.00	.35	4	.00
8	.32	16	.01	.38	7	.00	.34	5	.00
9	.32	12	.01	.38	7	.00	.34	5	.00
10	.32	13	.01	.38	5	.00	.50	32	.04
11	.47	25	.04	.37	6	.00	.39	4	.00
12	.45	16	.02	.37	39	.04	.36	3	.00
13	.45	10	.01	.37	8	.00	.35	7	.00
14	.45	8	.00	.37	8	.00	.42	19	.02
15	.45	10	.01	.37	18	.02	.35	58	.05
16	.40	19	.02	.36	6	.00	.35	6	.00
17	.40	9	.00	.36	5	.00	.35	5	.00
18	.40	8	.00	.36	4	.00	.35	4	.00
19	.45	32	.04	.36	3	.00	.35	4	.00
20	.47	16	.02	.36	4	.00	.35	4	.00
21	.44	9	.01	.35	9	.00	.35	4	.00
22	.40	8	.00	.35	5	.00	.35	4	.00
23	.40	10	.01	.35	7	.00	.35	4	.00
24	.40	7	.00	.35	4	.00	.60	4	.00
25	.40	8	.00	.35	3	.00	.70	48	.09
26	.39	6	.00	.35	3	.00	.58	11	.02
27	.39	10	.01	.35	4	.00	.56	55	.08
28	.39	8	.00	.35	4	.00	.66	32	.06
29	.39	8	.00	.35	4	.00	.60	9	.01
30	.39	8	.00	.35	3	.00	.56	7	.01
31	.39	6	.00	---	---	---	.52	---	---
TOTAL	12.19	---	0.28	10.95	---	0.07	13.08	---	0.39

		JANUARY			FEBRUARY			MARCH	
1	.51	7	.00	.83	48	.18	.40	7	.00
2	.50	7	.00	1.3	69	.39	1.1	89	.47
3	.49	5	.00	.50	17	.02	.50	9	.01
4	.48	6	.00	.45	4	.00	.45	5	.00
5	1.3	50	.22	.43	5	.00	.43	5	.00
6	.75	9	.02	.42	6	.00	.41	5	.00
7	.66	7	.01	.42	5	.00	.40	15	.02
8	.62	9	.02	.41	4	.00	.39	86	.09
9	.56	6	.00	.40	5	.00	.38	18	.02
10	.51	7	.00	.39	4	.00	.37	8	.00
11	.48	5	.00	.38	4	.00	.37	7	.00
12	.47	6	.00	.38	3	.00	.36	16	.02
13	1.1	26	.10	.37	5	.00	.35	8	.00
14	1.5	28	.18	.50	10	.01	.34	58	.05
15	1.1	11	.03	.58	10	.02	.33	161	.14
16	.80	4	.00	.50	8	.01	.33	17	.02
17	.56	7	.01	.41	5	.00	.32	8	.00
18	.50	5	.00	.39	5	.00	.32	8	.00
19	.48	4	.00	.37	19	.02	.32	13	.01
20	.52	21	.03	.35	13	.01	.31	29	.02
21	.47	6	.00	.34	5	.00	.30	18	.01
22	.45	7	.00	.33	4	.00	.30	14	.01
23	.43	6	.00	.32	5	.00	.30	10	.00
24	.41	8	.00	.32	4	.00	.30	8	.00
25	.38	8	.00	.31	4	.00	.29	6	.00
26	.36	7	.00	.30	4	.00	.29	4	.00
27	.35	9	.00	.30	3	.00	.28	11	.00
28	.35	6	.00	.30	3	.00	.28	10	.00
29	.34	7	.00	.48	10	.01	.27	10	.00
30	.34	6	.00	---	---	---	.27	10	.00
31	.51	20	.21	---	---	---	.26	7	.00
TOTAL	18.28	---	0.83	12.78	---	0.67	11.32	---	0.89

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.26	7	.00	.31	33	.03	.29	15	.01
2	.26	15	.01	.31	40	.03	.29	14	.01
3	.26	36	.03	.31	22	.02	.29	3	.00
4	.25	9	.00	.45	25	.03	.29	12	.00
5	.25	7	.00	.35	15	.01	.29	11	.00
6	.25	14	.00	.40	50	.05	.29	14	.01
7	.25	8	.00	.35	14	.01	.29	12	.00
8	.24	6	.00	.34	14	.01	.29	14	.01
9	.24	11	.00	.33	12	.01	.29	13	.01
10	.24	29	.02	.32	11	.00	.29	21	.02
11	.24	24	.02	.50	11	.01	.29	22	.02
12	.24	6	.00	.40	43	.05	.29	16	.01
13	.24	16	.01	.34	14	.01	.29	13	.01
14	.23	8	.00	.32	9	.00	.29	16	.01
15	.23	5	.00	.31	7	.00	.29	17	.01
16	.23	28	.02	.31	5	.00	.29	11	.00
17	.23	20	.01	.31	6	.00	.29	14	.01
18	.22	14	.00	.30	8	.00	.29	11	.00
19	2.1	1230	19	.30	10	.00	.28	15	.01
20	.69	95	.28	.30	3	.00	.28	11	.00
21	.53	49	.09	.30	7	.00	.28	13	.00
22	.47	17	.02	.30	42	.03	.28	9	.00
23	.46	11	.01	.30	12	.00	.27	8	.00
24	.44	12	.01	.30	10	.00	.26	11	.00
25	.52	50	.07	.29	8	.00	.25	11	.00
26	.45	70	.09	.29	10	.00	.25	8	.00
27	.38	19	.02	.29	9	.00	.24	8	.00
28	.35	32	.03	.29	13	.01	.24	8	.00
29	.32	21	.02	.29	75	.06	.23	8	.00
30	.31	15	.01	.29	23	.02	.23	7	.00
31	---	---	---	.29	24	.02	---	---	---
TOTAL	11.38	---	19.77	10.09	---	0.41	8.31	---	0.15
		JULY			AUGUST			SEPTEMBER	
1	.23	8	.00	.15	8	.00	.11	8	.00
2	.23	46	.03	.15	6	.00	.11	7	.00
3	.26	54	.04	.15	6	.00	.11	11	.00
4	.23	19	.01	.15	8	.00	.11	11	.00
5	.21	10	.00	.15	8	.00	.11	24	.00
6	.19	9	.00	.14	7	.00	.11	8	.00
7	.19	10	.00	.14	6	.00	.11	8	.00
8	.18	8	.00	.14	6	.00	.11	6	.00
9	.18	17	.00	.14	7	.00	.11	5	.00
10	.18	20	.00	.14	8	.00	.14	21	.00
11	.18	9	.00	.14	10	.00	.11	9	.00
12	.18	8	.00	.14	8	.00	.11	8	.00
13	.18	8	.00	.14	30	.01	.11	6	.00
14	.18	8	.00	.14	9	.00	.15	6	.00
15	.18	8	.00	.14	8	.00	.12	26	.00
16	.18	8	.00	.14	9	.00	.12	8	.00
17	.18	8	.00	.14	8	.00	.12	34	.01
18	.18	9	.00	.14	8	.00	.12	19	.00
19	.18	17	.00	.14	10	.00	.14	93	.04
20	.22	10	.00	.13	11	.00	.12	15	.00
21	.19	21	.01	.13	9	.00	.11	10	.00
22	.17	22	.01	.13	9	.00	.10	7	.00
23	.17	9	.00	.19	70	.04	.10	12	.00
24	.17	40	.02	.13	20	.00	.10	10	.00
25	.17	10	.00	.12	10	.00	.10	7	.00
26	.16	13	.00	.12	8	.00	.10	7	.00
27	.15	8	.00	.12	7	.00	.10	7	.00
28	.15	6	.00	.12	20	.00	.10	27	.00
29	.15	12	.00	.11	9	.00	.10	7	.00
30	.15	8	.00	.11	8	.00	.10	11	.00
31	.15	8	.00	.11	9	.00	---	---	---
TOTAL	5.70	---	0.12	4.23	---	0.05	3.36	---	0.05
YEAR	121.67		23.68						

16272200 KAMOOALII STREAM BELOW LULUKU STREAM, NEAR KANEOHE

LOCATION.--Lat 21°23'47", long 157°48'23", Hydrologic Unit 20060000, on left bank 300 ft downstream from Luluku Stream, 1.0 mi southwest of Castle High School, and 1.9 mi northwest of the intersection of State Highways 61 and 83.

DRAINAGE AREA.--3.81 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder and concrete control.

REMARKS.--Records good. Flow regulated by a flood-control dam upstream.

AVERAGE DISCHARGE.--7 years, 11.4 ft³/s (8,260 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft³/s Mar. 18, 1980, gage height, 5.50 ft from rating curve extended above 200 ft³/s; minimum, 0.60 ft³/s Mar. 27, 1978, Oct. 6, 7, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 142 ft³/s Apr. 19, gage height 2.61 ft; minimum, 0.60 ft³/s Oct. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	4.5	4.5	4.1	6.7	4.7	4.8	4.4	5.0	3.2	2.9	2.8
2	4.5	4.3	4.1	4.1	10	16	4.1	4.2	4.0	3.2	2.9	3.0
3	4.5	4.4	4.4	4.1	5.5	5.6	3.9	4.2	3.7	3.8	3.1	2.8
4	17	4.6	4.2	4.2	4.8	5.0	3.8	4.4	3.6	3.5	3.3	3.2
5	.94	4.8	3.9	9.9	4.6	4.6	3.6	4.5	3.7	3.2	3.0	3.0
6	.69	4.7	4.0	6.2	4.4	4.4	4.0	5.8	3.7	3.2	2.8	2.6
7	.64	4.4	4.0	5.4	5.4	4.4	3.6	4.3	3.6	3.1	2.7	2.6
8	3.0	4.4	4.3	5.3	5.0	4.4	4.1	4.3	3.6	3.1	2.8	2.8
9	3.9	4.3	5.7	4.8	4.6	4.3	3.8	4.1	3.8	4.2	3.0	2.6
10	4.0	4.4	5.2	4.5	4.7	4.2	4.8	4.0	4.6	4.2	3.0	3.2
11	4.7	4.9	4.5	4.5	4.8	4.1	4.6	9.1	4.0	3.4	2.6	3.0
12	4.9	6.8	4.5	4.4	4.5	4.1	4.1	7.0	3.7	3.1	2.5	3.0
13	4.6	6.0	5.7	6.9	4.6	4.0	4.5	4.8	3.6	3.2	2.9	2.8
14	4.4	5.0	5.3	7.0	6.0	4.1	4.0	4.4	3.4	3.1	2.3	3.2
15	4.2	4.7	5.1	5.5	8.5	4.1	3.8	5.5	3.5	3.1	2.4	4.7
16	4.2	4.8	4.4	5.2	6.2	4.1	3.5	4.7	3.7	3.2	2.5	3.4
17	4.4	5.0	4.4	4.9	5.1	4.1	3.7	4.4	3.4	3.2	2.7	4.1
18	4.4	4.5	4.1	4.7	5.0	3.8	3.7	4.5	3.4	3.0	3.2	3.2
19	5.6	4.7	4.0	4.4	5.9	3.8	37	4.2	3.3	3.1	3.2	3.1
20	6.6	5.1	4.1	5.0	5.3	3.8	24	4.0	3.3	3.3	3.1	2.7
21	5.0	5.7	4.0	4.5	5.0	3.8	8.8	3.9	3.4	3.8	3.1	2.6
22	4.7	4.8	4.0	4.4	4.8	3.8	6.1	4.8	3.3	2.8	3.3	2.6
23	4.6	4.7	4.0	5.3	5.2	3.8	5.2	4.5	3.3	2.6	3.2	2.5
24	4.4	4.6	4.5	5.0	5.0	3.6	5.0	4.0	3.3	2.6	3.2	2.6
25	4.6	4.5	6.3	5.1	5.0	3.6	6.5	3.9	3.3	2.6	3.1	2.7
26	4.6	4.5	6.6	5.5	5.1	3.6	6.3	3.8	3.3	3.5	3.0	2.7
27	4.4	4.3	4.5	4.7	4.6	4.1	5.3	3.6	3.2	3.4	3.0	2.8
28	4.6	4.3	5.1	4.4	4.2	4.7	4.7	3.3	3.2	2.9	2.8	2.8
29	4.3	4.6	5.1	4.3	4.6	3.8	4.5	3.9	3.4	2.8	2.9	2.5
30	4.8	4.4	4.5	4.2	---	3.8	4.2	3.5	3.3	2.8	2.8	2.7
31	4.4	---	4.1	4.8	---	3.6	---	4.4	---	2.8	2.8	---
TOTAL	142.67	142.7	143.1	157.3	155.1	139.8	190.0	140.4	107.6	99.0	90.1	88.3
MEAN	4.60	4.76	4.62	5.07	5.35	4.51	6.33	4.53	3.59	3.19	2.91	2.94
MAX	17	6.8	6.6	9.9	10	16	37	9.1	5.0	4.2	3.3	4.7
MIN	.64	4.3	3.9	4.1	4.2	3.6	3.5	3.3	3.2	2.6	2.3	2.5
AC-FT	283	283	284	312	308	277	377	278	213	196	179	175

CAL YR 1983 TOTAL 2883.07 MEAN 7.90 MAX 40 MIN .64 AC-FT 5720
WTR YR 1984 TOTAL 1596.07 MEAN 4.36 MAX 37 MIN .64 AC-FT 3170

16272200 KAHOOALII STREAM BELOW LULUKU STREAM, NEAR KANEOHE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1976 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: November 1976 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since November 1976.

REMARKS.--In addition to the sediment sampler record, observations of specific conductance, pH, and water temperature were collected during the year.

EXTREMES FOR PERIOD OF RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 879 mg/L Mar. 18, 1980; minimum daily mean, 2 mg/L several days in 1981, 1983, 1984.
SEDIMENT DISCHARGE: Maximum daily, 1,380 tons Mar. 18, 1980; minimum daily, 0 ton Oct. 9-11, 1981.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 132 mg/L Mar. 2; minimum daily mean, 2 mg/L Oct. 2, 3.
SEDIMENT DISCHARGE: Maximum daily, 17 tons Apr. 19; minimum daily, 0 ton Oct. 6, 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
OCT												
04...	1530	--	1.2	185	7.4	22.5	--	--	--	--	--	--
27...	0945	762	4.4	185	7.4	24.0	1.5	7.5	89	87	--	--
DEC												
23...	0925	--	4.2	185	7.3	22.0	--	--	--	--	--	--
JAN												
31...	1335	757	5.3	185	7.3	23.0	2.1	8.2	96	300	56	0
MAR												
30...	1225	--	4.1	140	7.1	25.0	--	--	--	--	--	--
APR												
23...	1230	762	5.3	170	7.3	27.0	9.4	7.2	90	--	--	--
MAY												
01...	1300	--	4.3	150	7.4	26.0	--	--	--	--	--	--
JUN												
18...	1340	761	3.4	182	7.4	28.0	1.3	7.3	94	66	55	1
JUL												
20...	0940	--	3.0	180	7.8	27.0	--	--	--	--	--	--
25...	1240	--	2.6	180	7.8	27.0	--	--	--	--	--	--
SEP												
18...	0950	761	3.6	191	7.7	28.0	3.2	7.2	92	840	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JAN											
31...	8.9	8.1	15	36	.9	1.1	57	8.4	20	<.10	20
JUN											
18...	8.2	8.4	16	38	1	.90	54	7.4	18	.10	22

< Actual value is known to be less than the value shown.

16272200 KAMOOALII STREAM BELOW LULUKU STREAM,NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)
OCT 27...	--	--	--	8	.30	.80	1.1	.110	--	--	--
JAN 31...	104	120	.14	2	.30	<.20	--	<.010	--	290	20
APR 23...	--	--	--	17	--	--	--	--	--	--	--
JUN 18...	107	110	.15	5	<.10	.20	--	.010	--	370	30
SEP 18...	--	--	--	9	<.10	.40	--	.050	.050	--	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
JAN 31...	<1	<1	<100	10	<10	<.5	1	<1	10	<1	<1
JUN 18...	<1	<1	<100	10	<10	1	<1	<1	<10	<1	<1

DATE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN 31...	<3	3	5	590	52	<1	2	<10	6	30	14
JUN 18...	<3	4	1	660	29	<1	4	<10	<4	80	18

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
JAN 31...	<.1	<.1	<1	<10	13	<1	<1	<1	<1	<1	69
JUN 18...	<.1	<.1	<1	<10	9	3	<1	<1	<1	<1	73

< Actual value is known to be less than the value shown.

16272200 KAHOOALII STREAM BELOW LULUKU STREAM, NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
JAN 31...	<6	10	4	1.3	<1	<.1	<.010	<.1	<.010	<.010	<.010
JUN 18...	<6	190	8	1.3	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
JAN 31...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
JUN 18...	<.01	.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 31...	<.01	<.01	<.10	<.1	<.01	<1	<.01	.03	<.01	<.01	<.01
JUN 18...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

16272200 KAMOOALII STREAM BELOW LULUKU STREAM,NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	5.1	3	.04	4.5	80	.97	4.5	10	.12
2	4.5	2	.02	4.3	100	1.2	4.1	9	.10
3	4.5	2	.02	4.4	50	.59	4.4	9	.11
4	17	10	.46	4.6	50	.62	4.2	9	.10
5	.94	4	.01	4.8	15	.19	3.9	10	.11
6	.69	5	.00	4.7	10	.13	4.0	10	.11
7	.64	4	.00	4.4	25	.30	4.0	12	.13
8	3.0	7	.06	4.4	60	.71	4.3	10	.12
9	3.9	7	.07	4.3	15	.17	5.7	15	.23
10	4.0	7	.08	4.4	7	.08	5.2	20	.28
11	4.7	7	.09	4.9	8	.11	4.5	15	.18
12	4.9	7	.09	6.8	6	.11	4.5	14	.17
13	4.6	7	.09	6.0	7	.11	5.7	15	.23
14	4.4	4	.05	5.0	5	.07	5.3	13	.19
15	4.2	5	.06	4.7	6	.08	5.1	13	.18
16	4.2	7	.08	4.8	5	.06	4.4	14	.17
17	4.4	4	.05	5.0	4	.05	4.4	15	.18
18	4.4	4	.05	4.5	3	.04	4.1	12	.13
19	5.6	5	.08	4.7	8	.10	4.0	15	.16
20	6.6	7	.12	5.1	7	.10	4.1	15	.17
21	5.0	5	.07	5.7	8	.12	4.0	13	.14
22	4.7	4	.05	4.8	7	.09	4.0	12	.13
23	4.6	4	.05	4.7	7	.09	4.0	11	.12
24	4.4	5	.06	4.6	9	.11	4.5	12	.15
25	4.6	3	.04	4.5	9	.11	6.3	13	.22
26	4.6	4	.05	4.5	7	.09	6.6	13	.23
27	4.4	10	.12	4.3	9	.10	4.5	13	.16
28	4.6	11	.14	4.3	11	.13	5.1	12	.17
29	4.3	7	.08	4.6	12	.15	5.1	12	.17
30	4.8	4	.05	4.4	10	.12	4.5	12	.15
31	4.4	5	.06	---	---	---	4.1	12	.13
TOTAL	142.67	---	2.29	142.7	---	6.90	143.1	---	4.94
		JANUARY			FEBRUARY			MARCH	
1	4.1	10	.11	6.7	12	.22	4.7	10	.13
2	4.1	11	.12	10	20	.54	16	132	8.8
3	4.1	11	.12	5.5	12	.18	5.6	13	.20
4	4.2	11	.12	4.8	10	.13	5.0	10	.14
5	9.9	20	.53	4.6	7	.09	4.6	7	.09
6	6.2	13	.22	4.4	6	.07	4.4	7	.08
7	5.4	10	.15	5.4	11	.16	4.4	7	.08
8	5.3	8	.11	5.0	9	.12	4.4	6	.07
9	4.8	8	.10	4.6	7	.09	4.3	6	.07
10	4.5	9	.11	4.7	6	.08	4.2	6	.07
11	4.5	7	.09	4.8	6	.08	4.1	5	.06
12	4.4	9	.11	4.5	6	.07	4.1	5	.06
13	6.9	11	.20	4.6	5	.06	4.0	5	.05
14	7.0	8	.15	6.0	10	.16	4.1	6	.07
15	5.5	7	.10	8.5	15	.34	4.1	6	.07
16	5.2	8	.11	6.2	11	.18	4.1	6	.07
17	4.9	7	.09	5.1	8	.11	4.1	6	.07
18	4.7	7	.09	5.0	7	.09	3.8	5	.05
19	4.4	8	.10	5.9	8	.13	3.8	5	.05
20	5.0	10	.14	5.3	6	.09	3.8	5	.05
21	4.5	10	.12	5.0	6	.08	3.8	5	.05
22	4.4	10	.12	4.8	5	.06	3.8	5	.05
23	5.3	12	.17	5.2	5	.07	3.8	6	.06
24	5.0	10	.14	5.0	6	.08	3.6	5	.05
25	5.1	6	.08	5.0	6	.08	3.6	5	.05
26	5.5	6	.09	5.1	6	.08	3.6	5	.05
27	4.7	7	.09	4.6	6	.07	4.1	8	.09
28	4.4	6	.07	4.2	6	.07	4.7	10	.13
29	4.3	6	.07	4.6	7	.09	3.8	9	.09
30	4.2	6	.07	---	---	---	3.8	12	.12
31	4.8	11	.14	---	---	---	3.6	12	.12
TOTAL	157.3	---	4.03	155.1	---	3.67	139.8	---	11.19

16272200 KAMOOALII STREAM BELOW LULUKU STREAM,NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	4.8	13	.17	4.4	10	.12	5.0	15	.20
2	4.1	15	.17	4.2	7	.08	4.0	20	.22
3	3.9	17	.18	4.2	7	.08	3.7	35	.35
4	3.8	17	.17	4.4	7	.08	3.6	30	.29
5	3.6	15	.15	4.5	8	.10	3.7	25	.25
6	4.0	16	.17	5.8	14	.22	3.7	30	.30
7	3.6	14	.14	4.3	10	.12	3.6	35	.34
8	4.1	10	.11	4.3	8	.09	3.6	30	.29
9	3.8	8	.08	4.1	6	.07	3.8	25	.26
10	4.8	16	.21	4.0	6	.06	4.6	25	.31
11	4.6	14	.17	9.1	18	.44	4.0	20	.22
12	4.1	8	.09	7.0	11	.21	3.7	15	.15
13	4.5	7	.09	4.8	5	.06	3.6	10	.10
14	4.0	8	.09	4.4	7	.08	3.4	25	.23
15	3.8	9	.09	5.5	10	.15	3.5	20	.19
16	3.5	8	.08	4.7	9	.11	3.7	18	.18
17	3.7	8	.08	4.4	10	.12	3.4	14	.13
18	3.7	7	.07	4.5	8	.10	3.4	14	.13
19	37	74	17	4.2	8	.09	3.3	16	.14
20	24	35	2.3	4.0	10	.11	3.3	14	.12
21	8.8	28	.67	3.9	8	.08	3.4	10	.09
22	6.1	25	.41	4.8	13	.17	3.3	12	.11
23	5.2	25	.35	4.5	12	.15	3.3	10	.09
24	5.0	22	.30	4.0	9	.10	3.3	10	.09
25	6.5	40	.70	3.9	9	.09	3.3	10	.09
26	6.3	30	.51	3.8	8	.08	3.3	10	.09
27	5.3	20	.29	3.6	7	.07	3.2	10	.09
28	4.7	14	.18	3.3	7	.06	3.2	10	.09
29	4.5	10	.12	3.9	10	.11	3.4	8	.07
30	4.2	10	.11	3.5	12	.11	3.3	6	.05
31	---	---	---	4.4	15	.18	---	---	---
TOTAL	190.0	---	25.25	140.4	---	3.69	107.6	---	5.26
		JULY			AUGUST			SEPTEMBER	
1	3.2	6	.05	2.9	8	.06	2.8	12	.09
2	3.2	6	.05	2.9	8	.06	3.0	12	.10
3	3.8	10	.10	3.1	9	.08	2.8	10	.08
4	3.5	10	.09	3.3	9	.08	3.2	14	.12
5	3.2	9	.08	3.0	9	.07	3.0	10	.08
6	3.2	9	.08	2.8	8	.06	2.6	9	.06
7	3.1	8	.07	2.7	7	.05	2.6	9	.06
8	3.1	8	.07	2.8	7	.05	2.8	10	.08
9	4.2	14	.16	3.0	8	.06	2.6	9	.06
10	4.2	11	.12	3.0	9	.07	3.2	12	.10
11	3.4	10	.09	2.6	10	.07	3.0	9	.07
12	3.1	9	.08	2.5	13	.09	3.0	9	.07
13	3.2	9	.08	2.9	14	.11	2.8	8	.06
14	3.1	8	.07	2.3	12	.07	3.2	10	.09
15	3.1	8	.07	2.4	11	.07	4.7	16	.20
16	3.2	9	.08	2.5	11	.07	3.4	12	.11
17	3.2	9	.08	2.7	12	.09	4.1	14	.15
18	3.0	8	.06	3.2	10	.09	3.2	10	.09
19	3.1	8	.07	3.2	14	.12	3.1	10	.08
20	3.3	10	.09	3.1	26	.22	2.7	9	.07
21	3.8	25	.26	3.1	26	.22	2.6	9	.06
22	2.8	20	.15	3.3	30	.27	2.6	10	.07
23	2.6	18	.13	3.2	28	.24	2.5	14	.09
24	2.6	9	.06	3.2	28	.24	2.6	14	.10
25	2.6	8	.06	3.1	32	.27	2.7	14	.10
26	3.5	10	.09	3.0	40	.32	2.7	12	.09
27	3.4	8	.07	3.0	38	.31	2.8	9	.07
28	2.9	8	.06	2.8	30	.23	2.8	9	.07
29	2.8	9	.07	2.9	20	.16	2.5	8	.05
30	2.8	8	.06	2.8	15	.11	2.7	8	.06
31	2.8	8	.06	2.8	15	.11	---	---	---
TOTAL	99.0	---	2.71	90.1	---	4.12	88.3	---	2.58
YEAR	1596.07		76.63						

16275000 HAIKU STREAM NEAR HEEIA

LOCATION.--Lat 21°24'46", long 157°49'33", Hydrologic Unit 20060000, on left bank 1.7 mi west of Kaneohe Post Office and 1.8 mi southwest of Heeia.

DRAINAGE AREA.--0.97 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1914 to October 1919, July 1939 to September 1977, October 1982 to current year.

REVISED RECORDS (FISCAL YEARS).--WSP 935: 1940. WSP 1319: 1916-19(M). WSP 1569: Drainage area. WSP 1719: 1942-43, 1946(M), 1947, 1949, 1951, 1954(M), 1955, 1957-59. WSP 1937: 1940-45(M), 1947(M), 1948-50(P), 1951, 1952(P), 1953(M), 1955-57(P), 1958-59, 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 271.9 ft above mean sea level (levels by city and county of Honolulu). Prior to Apr. 28, 1914, nonrecording gage and Apr. 28, 1914, to Oct. 25, 1919, water-stage recorder, at same site at different datums.

REMARKS.--Records fair. Honolulu Board of Water Supply has diverted ground water from tunnel in drainage area since 1943.

AVERAGE DISCHARGE (since diversion from tunnel began).--36 years (water years 1944-77, 1984), 2.14 ft^3/s (1,550 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,740 ft^3/s May 2, 1965, gage height, 7.94 ft, from rating curve extended above 57 ft^3/s on basis of slope-area measurements at gage heights 3.87 ft, 3.88 ft, and 7.94 ft; minimum, 0.20 ft^3/s July 20, 1957, Sept. 17, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33 ft^3/s Apr. 19, gage height, 1.97 ft, no peak above base of 340 ft^3/s; minimum, 1.1 ft^3/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	1.5	1.4	1.2	1.5	1.2	1.4	1.5	1.2	1.4	1.2	1.1
2	1.9	1.5	1.4	1.2	2.4	2.6	1.4	1.5	1.2	1.4	1.2	1.1
3	1.8	1.5	1.7	1.2	1.7	1.4	1.3	1.4	1.1	1.4	1.3	1.1
4	1.7	1.4	1.4	1.2	1.4	1.4	1.3	1.4	1.2	1.3	1.3	1.1
5	1.8	1.5	1.3	3.3	1.4	1.4	1.3	1.5	1.2	1.2	1.3	1.1
6	1.7	1.4	1.3	2.3	1.4	1.4	1.3	2.2	1.3	1.2	1.2	1.1
7	1.7	1.5	1.3	1.7	1.4	1.3	1.3	1.7	1.3	1.2	1.2	1.1
8	1.7	1.6	1.3	1.5	1.4	1.3	1.3	1.5	1.3	1.2	1.2	1.1
9	1.7	1.5	1.4	1.4	1.4	1.3	1.3	1.4	1.3	1.4	1.3	1.1
10	1.7	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.3	1.1
11	1.8	1.5	1.4	1.4	1.4	1.3	1.4	1.4	1.3	1.3	1.3	1.1
12	1.8	3.2	1.4	1.4	1.4	1.3	1.4	1.4	1.3	1.2	1.4	1.1
13	1.6	2.2	1.3	1.5	1.5	1.3	1.5	1.4	1.3	1.2	1.4	1.1
14	1.6	1.7	1.3	1.6	1.8	1.3	1.4	1.4	1.3	1.2	1.3	1.1
15	1.6	1.5	1.3	1.5	2.9	1.3	1.4	1.4	1.2	1.2	1.3	1.1
16	1.6	1.6	1.3	1.5	1.8	1.3	1.4	1.4	1.3	1.2	1.3	1.1
17	1.6	1.6	1.4	1.4	1.4	1.3	1.4	1.5	1.2	1.3	1.3	1.1
18	1.6	1.6	1.4	1.4	1.4	1.3	1.4	1.5	1.2	1.2	1.2	1.1
19	1.9	1.6	1.4	1.4	1.4	1.3	6.3	1.6	1.2	1.2	1.2	1.1
20	2.6	1.6	1.4	1.4	1.4	1.3	4.5	1.6	1.2	1.3	1.2	1.1
21	2.0	1.6	1.4	1.4	1.4	1.3	2.0	1.4	1.3	1.4	1.3	1.1
22	1.7	1.7	1.3	1.4	1.4	1.3	1.6	1.5	1.3	1.2	1.4	1.1
23	1.5	1.6	1.3	1.4	1.3	1.3	1.4	1.5	1.3	1.2	1.4	1.1
24	1.5	1.4	1.4	1.4	1.3	1.3	1.4	1.5	1.2	1.2	1.3	1.1
25	1.5	1.4	1.4	1.4	1.3	1.3	1.5	1.4	1.2	1.2	1.2	1.1
26	1.5	1.4	1.4	1.4	1.3	1.3	1.7	1.4	1.3	1.2	1.2	1.1
27	1.5	1.4	1.4	1.4	1.3	1.3	1.6	1.4	1.3	1.2	1.2	1.1
28	1.5	1.4	1.4	1.4	1.3	1.2	1.5	1.6	1.4	1.2	1.2	1.1
29	1.5	1.4	1.3	1.4	1.2	1.2	1.5	1.4	1.4	1.2	1.1	1.1
30	1.5	1.4	1.3	1.4	---	1.2	1.5	1.3	1.4	1.2	1.1	---
31	1.5	---	1.2	1.4	---	1.2	---	1.3	---	1.2	1.1	---
TOTAL	52.7	47.6	42.3	46.3	43.6	41.5	51.1	45.8	38.1	38.8	39.0	33.0
MEAN	1.70	1.59	1.36	1.49	1.50	1.34	1.70	1.48	1.27	1.25	1.26	1.10
MAX	2.6	3.2	1.7	3.3	2.9	2.6	6.3	2.2	1.4	1.4	1.4	1.1
MIN	1.5	1.4	1.2	1.2	1.2	1.2	1.3	1.3	1.1	1.2	1.1	1.1
AC-FT	105	94	84	92	86	82	101	91	76	77	77	65

CAL YR 1983	TOTAL	682.7	MEAN	1.87	MAX	9.3	MIN	1.2	AC-FT 1350
WTR YR 1984	TOTAL	519.8	MEAN	1.42	MAX	6.3	MIN	1.1	AC-FT 1030

16275000 HAIKU STREAM NEAR HEEIA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to September 1984.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: December 1983 to September 1984.

INSTRUMENTATION.--Automatic pumping sediment sampler since December 1983.

REMARKS.--In addition to the sediment sampler record, observations of specific conductance, pH, and water temperature were collected at this site.

EXTREMES FOR PERIOD DECEMBER 1983 TO SEPTEMBER 1984.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 35 mg/L Apr. 19; minimumn daily mean 1 mg/L Mar. 13, 14.
SEDIMENT DISCHARGE: Maximum daily, 0.60 ton Apr. 19; minimum daily, less than 0.01 ton for many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS (MG/L AS CACO3)
OCT 27...	1025	755	1.5	148	7.6	21.0	1.0	8.6	98	96	--
DEC 22...	1435	--	1.3	185	6.8	20.0	--	--	--	--	--
JAN 31...	1235	758	1.4	145	7.1	22.0	.90	8.1	93	72	45
MAR 16...	1440	--	1.3	140	6.9	21.0	--	--	--	--	--
APR 20...	1400	--	3.7	165	7.5	21.0	--	--	--	--	--
23...	1000	757	1.4	155	7.3	21.0	.80	7.9	89	--	--
JUN 18...	1115	758	1.2	141	7.4	21.5	.50	8.4	96	92	46
SEP 18...	1320	755	1.0	141	7.8	23.0	.70	7.7	91	96	--

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JAN 31...	0	8.3	5.8	12	36	.8	1.1	49	3.5	18	<.10
JUN 18...	6	9.5	5.5	12	36	.8	.70	40	2.9	14	<.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)
OCT 27...	--	--	--	--	9	<.10	.50	.140	--	--	--
JAN 31...	26	--	100	.14	2	<.10	<.20	<.010	40	10	<1
APR 23...	--	--	--	--	8	--	--	--	--	--	--
JUN 18...	28	95	97	.13	<2	<.10	.20	<.010	40	20	<1
SEP 18...	--	--	--	--	10	<.10	.60	.010	--	--	--

< Actual value is known to be less than the value shown.

16275000 HAIKU STREAM NEAR HEEIA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)
JAN 31...	<1	<100	6	<10	<.5	<1	<1	10	<1	<1	<3
JUN 18...	<1	<100	6	<10	<1	<1	<1	<10	<1	10	<3

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
JAN 31...	3	4	210	79	<1	<1	<10	6	14	14	<.1
JUN 18...	4	1	280	57	<1	<1	<10	<4	30	8	<.1

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
JAN 31...	<.1	<1	<10	6	<1	<1	<1	<1	<1	52	<6
JUN 18...	<.1	<1	<10	13	3	<1	<1	<1	<1	53	<6

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JAN 31...	10	6	.50	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01
JUN 18...	420	11	.20	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
JAN 31...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
JUN 18...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 31...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JUN 18...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

16275000 HAIKU STREAM NEAR HEEIA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), DECEMBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1							1.4	5	.02
2							1.4	5	.02
3							1.7	25	.11
4							1.4	16	.06
5							1.3	15	.05
6							1.3	15	.05
7							1.3	15	.05
8							1.3	15	.05
9							1.4	15	.06
10							1.4	7	.03
11							1.4	7	.03
12							1.4	7	.03
13							1.3	7	.02
14							1.3	7	.02
15							1.3	7	.02
16							1.3	7	.02
17							1.4	6	.02
18							1.4	6	.02
19							1.4	6	.02
20							1.4	6	.02
21							1.4	5	.02
22							1.3	4	.01
23							1.3	3	.01
24							1.4	7	.03
25							1.4	10	.04
26							1.4	10	.04
27							1.4	9	.03
28							1.4	8	.03
29							1.3	7	.02
30							1.3	6	.02
31							1.2	5	.02
TOTAL							42.3	---	0.99
		JANUARY			FEBRUARY			MARCH	
1	1.2	5	.02	1.5	6	.02	1.2	2	.00
2	1.2	4	.01	2.4	15	.10	2.6	15	.11
3	1.2	4	.01	1.7	4	.02	1.4	5	.02
4	1.2	4	.01	1.4	4	.02	1.4	3	.01
5	3.3	25	.22	1.4	4	.02	1.4	3	.01
6	2.3	10	.06	1.4	4	.02	1.4	3	.01
7	1.7	6	.03	1.4	4	.02	1.3	2	.00
8	1.5	4	.02	1.4	4	.02	1.3	2	.00
9	1.4	3	.01	1.4	4	.02	1.3	2	.00
10	1.4	3	.01	1.4	4	.02	1.3	2	.00
11	1.4	3	.01	1.4	4	.02	1.3	2	.00
12	1.4	3	.01	1.4	4	.02	1.3	2	.00
13	1.5	10	.04	1.5	6	.02	1.3	1	.00
14	1.6	15	.06	1.8	10	.05	1.3	1	.00
15	1.5	14	.06	2.9	20	.16	1.3	3	.01
16	1.5	13	.05	1.8	8	.04	1.3	10	.04
17	1.4	12	.05	1.4	6	.02	1.3	15	.05
18	1.4	11	.04	1.4	4	.02	1.3	11	.04
19	1.4	10	.04	1.4	4	.02	1.3	10	.04
20	1.4	12	.05	1.4	4	.02	1.3	10	.04
21	1.4	12	.05	1.4	4	.02	1.3	10	.04
22	1.4	15	.06	1.4	4	.02	1.3	9	.03
23	1.4	12	.05	1.3	3	.01	1.3	7	.02
24	1.4	10	.04	1.3	3	.01	1.3	6	.02
25	1.4	8	.03	1.3	3	.01	1.3	6	.02
26	1.4	8	.03	1.3	3	.01	1.3	7	.02
27	1.4	9	.03	1.3	3	.01	1.3	9	.03
28	1.4	10	.04	1.3	3	.01	1.2	8	.03
29	1.4	8	.03	1.2	2	.00	1.2	6	.02
30	1.4	6	.02	---	---	---	1.2	8	.03
31	1.4	6	.02	---	---	---	1.2	10	.03
TOTAL	46.3	---	1.21	43.6	---	0.77	41.5	---	0.67

16275000 HAIKU STREAM NEAR HEEIA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), DECEMBER 1983 TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1.4	13	.05	1.5	5	.02	1.2	6	.02
2	1.4	12	.05	1.5	6	.02	1.2	4	.01
3	1.3	10	.04	1.4	6	.02	1.1	4	.01
4	1.3	10	.04	1.4	5	.02	1.2	4	.01
5	1.3	8	.03	1.5	6	.02	1.2	4	.01
6	1.3	7	.02	2.2	15	.09	1.3	4	.01
7	1.3	6	.02	1.7	5	.02	1.3	4	.01
8	1.3	6	.02	1.5	2	.00	1.3	4	.01
9	1.3	6	.02	1.4	2	.00	1.3	4	.01
10	1.4	8	.03	1.4	2	.00	1.4	5	.02
11	1.4	8	.03	1.4	2	.00	1.3	4	.01
12	1.4	8	.03	1.4	2	.00	1.3	4	.01
13	1.5	8	.03	1.4	2	.00	1.3	3	.01
14	1.4	8	.03	1.4	2	.00	1.3	3	.01
15	1.4	7	.03	1.4	2	.00	1.2	2	.00
16	1.4	7	.03	1.4	2	.00	1.3	2	.00
17	1.4	7	.03	1.5	2	.00	1.2	2	.00
18	1.4	6	.02	1.5	2	.00	1.2	3	.00
19	6.3	35	.60	1.6	2	.00	1.2	3	.00
20	4.5	20	.24	1.6	4	.02	1.2	3	.00
21	2.0	10	.05	1.4	6	.02	1.3	2	.00
22	1.6	8	.03	1.5	6	.02	1.3	2	.00
23	1.4	6	.02	1.5	6	.02	1.3	2	.00
24	1.4	6	.02	1.5	6	.02	1.2	2	.00
25	1.5	6	.02	1.4	6	.02	1.2	2	.00
26	1.7	5	.02	1.4	6	.02	1.3	2	.00
27	1.6	5	.02	1.4	6	.02	1.3	2	.00
28	1.5	5	.02	1.6	6	.03	1.4	2	.00
29	1.5	5	.02	1.4	6	.02	1.4	2	.00
30	1.5	5	.02	1.3	6	.02	1.4	2	.00
31	---	---	---	1.3	6	.02	---	---	---
TOTAL	51.1	---	1.63	45.8	---	0.46	38.1	---	0.16
		JULY			AUGUST			SEPTEMBER	
1	1.4	2	.00	1.2	2	.00	1.1	3	.00
2	1.4	2	.00	1.2	2	.00	1.1	3	.00
3	1.4	2	.00	1.3	3	.01	1.1	3	.00
4	1.3	2	.00	1.3	3	.01	1.1	3	.00
5	1.2	2	.00	1.3	3	.01	1.1	3	.00
6	1.2	2	.00	1.2	2	.00	1.1	3	.00
7	1.2	2	.00	1.2	2	.00	1.1	2	.00
8	1.2	2	.00	1.2	2	.00	1.1	2	.00
9	1.4	2	.00	1.3	3	.01	1.1	2	.00
10	1.4	2	.00	1.3	3	.01	1.1	2	.00
11	1.3	2	.00	1.3	3	.01	1.1	2	.00
12	1.2	2	.00	1.4	4	.02	1.1	2	.00
13	1.2	2	.00	1.4	3	.01	1.1	2	.00
14	1.2	2	.00	1.3	3	.01	1.1	2	.00
15	1.2	2	.00	1.3	2	.00	1.1	2	.00
16	1.2	3	.00	1.3	2	.00	1.1	2	.00
17	1.3	3	.01	1.3	2	.00	1.1	2	.00
18	1.2	3	.00	1.2	2	.00	1.1	2	.00
19	1.2	3	.00	1.2	2	.00	1.1	3	.00
20	1.3	4	.01	1.2	2	.00	1.1	3	.00
21	1.4	4	.02	1.3	3	.01	1.1	3	.00
22	1.2	3	.00	1.4	4	.02	1.1	2	.00
23	1.2	2	.00	1.4	3	.01	1.1	2	.00
24	1.2	2	.00	1.3	3	.01	1.1	2	.00
25	1.2	2	.00	1.2	3	.00	1.1	2	.00
26	1.2	2	.00	1.2	3	.00	1.1	2	.00
27	1.2	2	.00	1.2	3	.00	1.1	2	.00
28	1.2	2	.00	1.2	3	.00	1.1	2	.00
29	1.2	2	.00	1.2	3	.00	1.1	2	.00
30	1.2	2	.00	1.1	3	.00	1.1	2	.00
31	1.2	2	.00	1.1	3	.00	---	---	---
TOTAL	38.8	---	0.04	39.0	---	0.15	33.0	---	0.00
YEAR	519.8		6.08						

16283200 KAHALUU STREAM NEAR AHUIMANU

LOCATION.--Lat 21°26'32", long 157°50'47", Hydrologic Unit 20060000, on left bank 1.1 mi west of Valley of the Temples Memorial Park, 1.3 mi south of Kahaluu School, and 2.7 mi northwest of Heeia Elementary School, and 2.7 mi northwest of Heeia Elementary School.

DRAINAGE AREA.--0.99 mi^2.

PERIOD OF RECORD.--October 1983 to September 1984.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 150 ft, from topographic map.

REMARKS.--Records fair. Honolulu Board of Water Supply has diverted groundwater from tunnel in drainage area since 1947. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 225 ft^3/s Feb. 2, gage height, 3.60 ft, no other peak above base of 180 ft^3/s; minimum, 0.58 ft^3/s, Sept. 22-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.3	1.2	1.0	1.8	1.2	.97	.85	.80	.66	.75	.70
2	1.3	1.3	1.1	1.0	7.3	3.9	.91	.85	.80	.66	.75	.70
3	1.3	1.3	2.3	1.0	1.9	1.4	.91	.85	.80	.70	.70	.70
4	1.4	1.3	1.5	1.0	1.5	1.1	.91	.85	.80	.70	.70	.70
5	1.6	1.2	1.3	6.4	1.3	1.0	.91	.85	.80	.70	.70	.70
6	1.3	1.2	1.2	2.0	1.3	1.0	.91	.97	.80	.70	.70	.70
7	1.3	1.3	1.2	1.5	1.6	.97	.91	.85	.80	.75	.70	.70
8	1.3	1.3	1.2	1.3	1.4	.97	.91	.85	.80	.75	.70	.70
9	1.3	1.2	1.2	1.2	1.3	.97	.85	.85	.80	.75	.70	.70
10	1.3	1.2	1.2	1.1	1.3	.91	.85	.85	.75	.75	.70	.70
11	1.3	1.3	1.1	1.0	1.3	.91	.85	.85	.75	.75	.70	.66
12	1.4	2.0	1.0	1.0	1.2	.91	.85	.85	.75	.75	.70	.66
13	1.3	1.6	1.1	2.3	1.4	.91	.97	.85	.75	.75	.70	.66
14	1.3	1.4	1.1	1.6	1.9	.85	.85	.85	.75	.75	.70	.62
15	1.2	1.4	1.1	1.3	3.9	.85	.85	.85	.75	.75	.70	.70
16	1.1	1.4	1.1	1.2	1.9	.85	.85	.85	.75	.75	.68	.70
17	1.2	1.4	1.1	1.2	1.6	.85	.85	.85	.70	.75	.66	.66
18	1.2	1.3	1.1	1.1	1.4	.85	.85	.85	.70	.75	.62	.66
19	1.6	1.3	1.0	1.0	2.3	.85	2.5	.91	.70	.75	.62	.66
20	2.0	1.4	1.0	1.1	1.6	.85	1.5	.85	.70	.80	.62	.62
21	1.4	1.6	1.0	.97	1.4	.85	1.2	.85	.70	.80	.62	.62
22	1.3	1.3	.97	.91	1.3	.85	.91	.90	.70	.75	.62	.58
23	1.3	1.3	.97	1.1	1.3	.85	.85	.85	.70	.75	.70	.58
24	1.3	1.3	3.0	.97	1.3	.85	1.0	.85	.70	.75	.70	.58
25	1.3	1.3	3.7	.97	1.3	.85	1.4	.85	.66	.75	.70	.66
26	1.3	1.2	2.8	1.1	1.3	.85	1.2	.85	.66	.75	.66	.70
27	1.3	1.2	1.5	1.4	1.3	.91	1.0	.85	.68	.75	.62	.70
28	1.3	1.2	1.3	1.5	1.2	.91	.91	.85	.66	.75	.62	.70
29	1.2	1.3	1.2	1.5	1.4	.91	.85	.80	.66	.75	.62	.70
30	1.2	1.2	1.1	1.4	---	.91	.85	.80	.66	.75	.62	.70
31	1.2	---	1.1	1.5	---	.97	---	.80	---	.75	.62	---
TOTAL	41.3	40.0	42.74	43.62	51.0	31.81	30.13	26.43	22.03	22.97	20.90	20.12
MEAN	1.33	1.33	1.38	1.41	1.76	1.03	1.00	.85	.73	.74	.67	.67
MAX	2.0	2.0	3.7	6.4	7.3	3.9	2.5	.97	.80	.80	.75	.70
MIN	1.1	1.2	.97	.91	1.2	.85	.85	.80	.66	.66	.62	.58
AC-FT	82	79	85	87	101	63	60	52	44	46	41	40

WTR YR 1984 TOTAL 393.05 MEAN 1.07 MAX 7.3 MIN .58 AC-FT 780

16283600 SOUTH FORK WAIHEE STREAM NEAR HEEIA

LOCATION.--Lat 21°26'47", long 157°52'12", Hydrologic Unit 20060000, on left bank 0.2 mi upstream from confluence with North Fork, 3.0 mi southwest of Waiahole School, and 4.0 mi northwest of Heeia.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 615.74 ft above mean sea level (levels by Honolulu Board of Water Supply).

REMARKS.--Records good. Honolulu Board of Water Supply diverts water from wells in drainage area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--22 years, 1.54 ft^3/s (1,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 430 ft^3/s Oct. 28, 1981, gage height, 4.68 ft, from rating curve extended above 4.8 ft^3/s; no flow July 7, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft^3/s Feb. 2, gage height, 2.45 ft, no other peak above base of 47 ft^3/s; minimum, 0.56 ft^3/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.56	.56	.56	.82	.75	.65	.85	.91	.91	1.1	1.0
2	.65	.56	.56	.56	1.9	1.4	.70	.85	.91	.91	1.1	1.0
3	.65	.56	.73	.56	.70	.75	.75	.85	.91	.91	1.1	1.0
4	.65	.56	.60	.60	.70	.70	.75	.85	.91	.91	1.1	1.0
5	.65	.56	.60	1.8	.65	.70	.75	.91	.91	.91	1.1	1.0
6	.70	.56	.60	.65	.65	.70	.75	.91	.91	.91	1.1	1.0
7	.65	.56	.60	.65	.65	.70	.75	.91	.91	.91	1.1	1.0
8	.60	.56	.56	.65	.65	.70	.75	.91	.91	.91	1.1	1.0
9	.60	.56	.60	.65	.65	.70	.75	.91	.91	.98	1.1	1.0
10	.60	.56	.60	.65	.65	.70	.75	.91	.91	.98	1.1	1.0
11	.60	.63	.60	.65	.65	.70	.80	.91	.91	.98	1.1	1.0
12	.65	.85	.60	.65	.65	.70	.80	.91	.91	.98	1.1	1.0
13	.60	.60	.60	1.1	.70	.70	.80	.91	.91	.98	1.1	1.0
14	.60	.56	.56	.70	.85	.70	.75	.91	.91	.98	1.1	1.0
15	.60	.56	.56	.65	1.7	.70	.75	.91	.91	.98	1.1	1.2
16	.60	.56	.56	.65	.75	.70	.75	.91	1.0	.98	1.1	1.1
17	.60	.56	.56	.65	.70	.70	.75	.91	.91	.98	1.1	1.1
18	.65	.56	.56	.65	.70	.65	.75	.91	.91	.98	1.1	1.1
19	.70	.56	.56	.65	.95	.65	1.4	.91	.91	.98	1.1	1.1
20	.80	.62	.56	.65	.75	.65	.91	.91	.91	1.1	1.1	1.1
21	.60	.65	.56	.65	.70	.65	.85	.91	.91	1.3	1.1	1.1
22	.60	.60	.56	.65	.70	.65	.75	.91	.91	1.1	1.1	1.1
23	.56	.56	.56	.69	.70	.65	.75	.91	.91	1.1	1.1	1.1
24	.56	.56	.62	.65	.70	.65	.80	.91	.91	1.1	1.1	1.1
25	.56	.56	.88	.65	.70	.65	.85	.91	.91	1.1	1.1	1.1
26	.66	.56	.60	.65	.70	.65	.80	.91	.91	1.1	1.1	1.0
27	.60	.56	.56	.65	.70	.65	.75	.91	.91	1.1	1.1	1.0
28	.60	.56	.56	.65	.70	.65	.75	.91	.91	1.1	1.1	1.0
29	.56	.60	.56	.65	.75	.65	.75	.91	.91	1.1	1.1	1.0
30	.56	.56	.56	.65	---	.65	.80	.91	.91	1.1	1.1	1.0
31	.56	---	.56	.65	---	.65	---	.91	---	1.1	1.0	---
TOTAL	19.22	17.43	18.31	21.52	22.77	21.80	23.66	27.97	27.39	31.46	34.0	31.2
MEAN	.62	.58	.59	.69	.79	.70	.79	.90	.91	1.01	1.10	1.04
MAX	.80	.85	.88	1.8	1.9	1.4	1.4	.91	1.0	1.3	1.1	1.2
MIN	.56	.56	.56	.56	.65	.65	.65	.85	.91	.91	1.0	1.0
AC-FT	38	35	36	43	45	43	47	55	54	62	67	62

CAL YR 1983 TOTAL 184.43 MEAN .51 MAX 1.1 MIN .22 AC-FT 366
WTR YR 1984 TOTAL 296.73 MEAN .81 MAX 1.9 MIN .56 AC-FT 589

16283700 NORTH FORK WAIHEE STREAM NEAR HEEIA

LOCATION.--Lat 21°26'48", long 157°52'18", Hydrologic Unit 20060000, on left bank 0.3 mi upstream from confluence with South Fork, 2.8 mi southwest of Waiahole School, and 4.3 mi northwest of Heeia.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 639.00 ft above mean sea level (levels by Honolulu Board of Water Supply).

REMARKS.--Records good. Honolulu Board of Water Supply diverts water from wells in South Fork Waihee which affects the low flow at this station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--22 years, 1.64 ft^3/s (1,190 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 376 ft^3/s Feb. 4, 1965, gage height, 3.38 ft, from rating curve extended above 19 ft^3/s; no flow July 7, 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38 ft^3/s Feb. 2, gage height, 1.65 ft, no peak above base of 45 ft^3/s; minimum, 0.81 ft^3/s many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.91	.91	.81	.86	1.2	.96	.91	1.1	1.2	1.2	1.3	1.3
2	.91	.86	.81	.86	1.8	1.4	.91	1.1	1.2	1.2	1.3	1.3
3	.91	.86	1.2	.91	1.0	.96	.96	1.1	1.2	1.2	1.3	1.3
4	.91	.86	.86	.91	1.0	.96	.96	1.1	1.2	1.2	1.3	1.3
5	.91	.86	.81	1.9	1.0	.96	1.0	1.1	1.2	1.2	1.3	1.3
6	.96	.86	.81	1.0	1.0	.96	1.0	1.2	1.2	1.2	1.3	1.3
7	.91	.86	.81	1.0	1.0	.96	1.0	1.2	1.2	1.2	1.3	1.3
8	.91	.86	.81	1.0	1.0	.96	1.0	1.2	1.2	1.2	1.3	1.3
9	.91	.86	.81	1.0	1.0	.96	1.0	1.2	1.2	1.2	1.3	1.3
10	.91	.86	.81	1.0	1.0	.96	1.0	1.2	1.2	1.3	1.3	1.3
11	.91	.95	.81	1.0	1.0	.96	1.0	1.2	1.2	1.3	1.3	1.3
12	.91	1.1	.81	1.0	1.0	.96	1.0	1.2	1.2	1.3	1.3	1.3
13	.91	.96	.81	1.4	1.0	.96	1.0	1.2	1.2	1.3	1.3	1.3
14	.91	.86	.81	1.0	1.2	.96	1.0	1.2	1.2	1.3	1.3	1.3
15	.91	.86	.81	1.0	1.5	.96	1.0	1.2	1.2	1.3	1.3	1.4
16	.91	.86	.81	1.0	.96	.96	1.0	1.2	1.4	1.3	1.3	1.3
17	.91	.86	.81	1.0	.96	.96	1.0	1.2	1.2	1.3	1.3	1.3
18	.91	.86	.81	1.0	.96	.96	1.0	1.2	1.2	1.3	1.3	1.3
19	1.0	.86	.81	1.0	1.1	.96	1.5	1.2	1.2	1.3	1.3	1.3
20	1.1	.96	.81	1.0	.96	.96	1.3	1.2	1.2	1.5	1.3	1.3
21	.96	.96	.81	1.0	.96	.96	1.2	1.2	1.2	1.4	1.3	1.3
22	.91	.86	.81	1.0	.96	.96	1.1	1.2	1.2	1.3	1.3	1.3
23	.91	.86	.81	1.1	.96	.96	1.0	1.2	1.2	1.3	1.3	1.3
24	.91	.86	.86	1.0	.96	.96	1.1	1.2	1.2	1.3	1.3	1.3
25	.91	.81	.99	1.0	.96	.96	1.1	1.2	1.2	1.3	1.3	1.3
26	1.0	.81	.91	1.0	.96	.96	1.0	1.2	1.2	1.3	1.3	1.3
27	.91	.81	.86	1.0	.96	.96	1.0	1.2	1.2	1.3	1.3	1.3
28	.91	.81	.86	1.0	.96	.96	1.0	1.2	1.2	1.3	1.3	1.3
29	.91	.81	.86	1.0	.96	.91	1.0	1.2	1.2	1.3	1.3	1.3
30	.91	.81	.86	1.0	---	.91	1.0	1.2	1.2	1.3	1.3	1.3
31	.91	---	.86	1.0	---	.91	---	1.2	---	1.3	1.3	---
TOTAL	28.68	26.18	26.13	31.94	30.28	30.05	31.04	36.7	36.2	39.7	40.3	39.1
MEAN	.93	.87	.84	1.03	1.04	.97	1.03	1.18	1.21	1.28	1.30	1.30
MAX	1.1	1.1	1.2	1.9	1.8	1.4	1.5	1.2	1.4	1.5	1.3	1.4
MIN	.91	.81	.81	.86	.96	.91	.91	1.1	1.2	1.2	1.3	1.3
AC-FT	57	52	52	63	60	60	62	73	72	79	80	78

CAL YR 1983 TOTAL 304.15 MEAN .83 MAX 1.4 MIN .33 AC-FT 603
WTR YR 1984 TOTAL 396.30 MEAN 1.08 MAX 1.9 MIN .81 AC-FT 786

16284200 WAIHEE STREAM NEAR KAHALUU

LOCATION.--Lat 21°27'04", long 157°51'36", Hydrologic Unit 20060000, on right bank 0.2 mi downstream from forest-reserve boundary, 1.0 mi south of Kahaluu School, and 1.6 mi west of Ahuimanu sewage treatment plant.

DRAINAGE AREA.--0.97 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 170 ft, from topographic map.

REMARKS.--Records good. Honolulu Board of Water Supply diverts water from tunnel and wells in drainage area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years, 5.74 ft^3/s (4,160 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft^3/s Mar. 14, 1982, gage height, 7.52 ft, from rating curve extended above 100 ft^3/s; minimum, 1.1 ft^3/s Apr. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 323 ft^3/s Feb. 2, gage height, 5.18 ft, no other peak above base of 150 ft^3/s; minimum, 2.7 ft^3/s June 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	4.6	4.6	4.5	5.2	4.7	4.5	4.5	4.5	4.6	4.6	4.7
2	4.7	4.6	4.6	4.5	16	8.6	4.4	4.5	4.5	4.6	4.6	4.7
3	4.7	4.6	5.9	4.5	5.3	5.0	4.5	4.6	4.5	4.6	4.6	4.6
4	4.7	4.6	4.9	4.5	5.2	4.9	4.5	4.6	4.5	4.6	4.7	4.6
5	5.2	4.6	4.6	10	5.0	4.7	4.5	4.7	4.5	4.6	4.7	4.7
6	5.0	4.6	4.6	5.3	5.0	4.7	4.5	4.7	3.7	4.6	4.7	4.6
7	4.6	4.6	4.6	5.2	5.0	4.7	4.5	4.6	4.4	4.6	4.7	4.6
8	4.6	4.6	4.6	5.0	4.9	4.7	4.5	4.6	4.4	4.5	4.7	4.6
9	4.6	4.6	4.6	4.9	4.9	4.7	4.5	4.6	4.4	4.6	4.7	4.6
10	4.6	4.7	4.6	4.7	4.9	4.7	4.5	4.6	4.5	4.6	4.7	4.6
11	4.6	4.9	4.6	4.7	4.7	4.7	4.5	4.6	4.5	4.6	4.7	4.6
12	4.7	5.8	4.6	4.7	4.7	4.7	4.5	4.6	4.5	4.6	4.7	4.6
13	4.6	5.3	4.6	5.9	4.9	4.7	4.6	4.6	4.4	4.6	4.7	4.6
14	4.6	5.0	4.6	5.3	5.4	4.7	4.5	4.6	4.4	4.6	4.6	4.6
15	4.6	4.9	4.6	5.2	7.6	4.7	4.4	4.6	4.4	4.5	4.6	5.0
16	4.6	4.7	4.6	4.9	5.3	4.7	4.4	4.6	4.7	4.6	4.6	4.6
17	4.6	4.6	4.6	4.7	5.0	4.7	4.4	4.6	4.5	4.7	4.6	4.6
18	4.7	4.6	4.6	4.7	4.9	4.6	4.2	4.6	4.5	4.6	4.6	4.7
19	5.0	4.6	4.6	4.7	5.5	4.6	5.9	4.6	4.5	4.6	4.6	4.6
20	5.3	4.7	4.6	4.7	4.9	4.6	5.0	4.6	4.5	5.0	4.6	4.5
21	4.9	4.7	4.6	4.7	4.9	4.6	4.9	4.6	4.5	5.0	4.6	4.5
22	4.7	4.6	4.6	4.7	4.7	4.6	4.5	4.7	4.5	4.7	4.6	4.5
23	4.7	4.6	4.6	4.9	4.7	4.6	4.4	4.5	4.5	4.7	4.6	4.5
24	4.6	4.6	4.9	4.7	4.7	4.5	4.7	4.5	4.5	4.7	4.6	4.5
25	4.6	4.6	5.7	4.7	4.7	4.5	5.0	4.5	4.5	4.7	4.6	4.5
26	4.9	4.6	5.2	4.7	4.7	4.5	5.0	4.5	4.5	4.7	4.6	4.5
27	4.7	4.6	4.6	4.7	4.7	4.5	4.6	4.5	4.5	4.7	4.6	4.5
28	4.6	4.6	4.6	4.7	4.7	4.6	4.6	4.5	4.5	4.7	4.6	4.5
29	4.6	4.6	4.6	4.7	4.7	4.5	4.5	4.5	4.5	4.7	4.6	4.5
30	4.6	4.6	4.6	4.7	---	4.5	4.5	4.5	4.6	4.6	4.6	4.5
31	4.6	---	4.5	4.7	---	4.5	---	4.5	---	4.6	4.6	---
TOTAL	146.4	141.3	146.1	154.5	156.8	148.0	138.0	141.8	133.9	144.1	143.6	137.7
MEAN	4.72	4.71	4.71	4.98	5.41	4.77	4.60	4.57	4.46	4.65	4.63	4.59
MAX	5.3	5.8	5.9	10	16	8.6	5.9	4.7	4.7	5.0	4.7	5.0
MIN	4.6	4.6	4.5	4.5	4.7	4.5	4.2	4.5	3.7	4.5	4.6	4.5
AC-FT	290	280	290	306	311	294	274	281	266	286	285	273

CAL YR 1983 TOTAL 2077.2 MEAN 5.69 MAX 8.9 MIN 4.5 AC-FT 4120
WTR YR 1984 TOTAL 1732.2 MEAN 4.73 MAX 16 MIN 3.7 AC-FT 3440

16294900 WAIKANE STREAM AT ALTITUDE 75 FT, AT WAIKANE

LOCATION.--Lat 21°30'00", long 157°51'54", Hydrologic Unit 20060000, on right bank 0.3 mi downstream from Waikeekee Stream, 0.7 mi west of Waikane, and 1.2 mi northwest of Waiahole School.

DRAINAGE AREA.--2.22 mi^2.

PERIOD OF RECORD.--December 1959 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 75 ft, from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Waiahole tunnel diverts from two tributaries above station for irrigation in vicinity of Waipahu. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--24 years (water years 1961-84), 8.35 ft^3/s (6,050 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft^3/s Feb. 4, 1965, gage height, 10.76 ft, from rating curve extended above 120 ft^3/s on basis of slope-area measurements at gage heights 4.88 ft, 9.46 ft, and 10.76 ft; minimum, 0.76 ft^3/s Oct. 27, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 392 ft^3/s Jan. 5, gage height, 3.94 ft, no peak above base of 700 ft^3/s; minimum, 0.79 ft^3/s Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	3.7	3.3	2.0	3.9	2.8	2.5	3.1	2.1	1.7	1.7	1.5
2	4.7	3.3	3.1	2.0	23	7.7	2.4	3.0	2.2	1.7	1.7	1.5
3	4.0	3.3	4.7	2.1	4.2	3.4	2.3	2.9	2.1	1.8	1.8	1.3
4	3.7	3.7	3.4	2.0	3.3	3.2	2.5	2.8	2.0	1.7	2.0	1.3
5	30	3.5	3.0	65	3.1	3.0	3.0	3.2	2.0	1.6	1.9	1.3
6	8.4	3.5	2.9	10	3.3	2.9	3.2	5.8	2.0	1.6	1.7	1.3
7	5.4	2.9	2.9	5.8	3.5	2.8	3.1	2.9	1.9	1.8	1.7	1.3
8	4.9	3.0	3.0	5.2	3.5	2.7	2.0	2.7	1.8	1.7	1.6	1.5
9	4.3	3.0	3.8	4.2	3.3	2.7	2.1	2.6	1.8	2.2	1.7	1.4
10	4.0	2.9	3.6	3.8	3.1	2.7	2.3	2.5	2.1	2.3	1.7	1.3
11	4.1	8.6	3.0	3.6	2.9	2.7	2.3	3.1	1.9	1.8	1.7	1.4
12	6.1	17	2.9	3.7	2.7	2.6	2.1	3.3	1.8	1.6	1.7	1.4
13	4.8	7.2	2.7	12	2.7	2.5	3.7	2.8	1.7	1.6	2.0	1.4
14	5.3	5.0	2.7	6.4	6.4	2.5	2.7	2.6	1.7	1.6	1.5	1.4
15	3.9	4.3	2.7	5.1	6.3	2.5	2.2	2.4	1.7	1.6	1.4	1.6
16	3.6	4.1	2.5	4.4	4.5	2.5	2.2	2.4	1.9	1.6	1.5	1.5
17	3.8	3.8	2.4	4.1	3.6	2.5	2.2	2.5	2.1	2.6	1.5	1.3
18	3.7	3.6	2.4	3.9	3.6	2.6	2.1	2.5	1.9	1.7	1.5	1.9
19	9.6	3.7	2.2	3.6	7.0	2.7	17	2.4	1.7	1.6	1.5	1.4
20	12	4.0	2.2	4.8	4.0	2.5	7.5	2.4	1.7	1.8	1.4	1.3
21	5.8	3.9	2.2	4.1	3.4	5.5	5.8	2.4	1.8	2.9	1.2	1.2
22	4.9	3.5	2.2	3.7	3.2	2.4	3.4	4.0	1.7	1.8	1.3	1.1
23	4.6	3.3	2.2	5.4	3.1	2.2	2.7	2.6	1.6	1.6	1.4	1.2
24	4.3	3.3	2.7	4.2	3.1	2.2	6.6	2.5	1.6	1.6	1.5	1.3
25	4.1	3.2	3.4	3.7	3.1	2.2	13	2.4	1.6	1.5	1.5	1.3
26	6.4	3.5	3.2	3.5	3.1	2.0	8.1	2.3	1.6	1.5	1.4	1.5
27	7.0	3.1	2.5	3.5	3.2	2.0	5.2	2.3	1.6	1.5	1.4	1.4
28	4.6	3.0	2.4	3.4	3.0	2.2	4.0	2.2	1.6	1.7	1.4	1.4
29	3.9	3.2	2.3	3.2	2.9	2.4	3.5	2.2	1.9	1.7	1.5	1.4
30	3.5	3.0	2.2	3.1	---	2.5	3.2	2.1	1.9	1.6	1.4	1.4
31	3.5	---	2.1	3.2	---	2.3	---	2.0	---	1.7	1.6	---
TOTAL	186.0	127.1	86.8	194.7	126.0	87.4	124.9	84.9	55.0	54.7	48.8	41.5
MEAN	6.00	4.24	2.80	6.28	4.34	2.82	4.16	2.74	1.83	1.76	1.57	1.38
MAX	30	17	4.7	65	23	7.7	17	5.8	2.2	2.9	2.0	1.9
MIN	3.5	2.9	2.1	2.0	2.7	2.0	2.0	2.0	1.6	1.5	1.2	1.1
AC-FT	369	252	172	386	250	173	248	168	109	108	97	82

CAL YR 1983	TOTAL	1482.2	MEAN	4.06	MAX	30	MIN	2.1	AC-FT	2940
WTR YR 1984	TOTAL	1217.8	MEAN	3.33	MAX	65	MIN	1.1	AC-FT	2420

NOTE.--No gage-height record May 27 to June 28.

16296500 KAHANA STREAM AT ALTITUDE 30 FT, NEAR KAHANA

LOCATION.--Lat 21°32'37", long 157°53'07", Hydrologic Unit 20060000, on right bank 600 ft upstream from Kawa Stream, 1.1 mi southwest of Kahana, and 2.2 mi southwest of Swanzy Beach Park in Kaaawa.

DRAINAGE AREA.--3.74 mi^2.

PERIOD OF RECORD.--December 1958 to current year.

REVISED RECORDS.--WSP 1937: 1959-60.

GAGE.--Water-stage recorder and concrete-masonry control. Altitude of gage is 30 ft, from topographic map.

REMARKS.--Records fair to poor. Approximately 9 ft^3/s is diverted by Waiahole Water Co. at 800-ft elevation, 2.3 mi above station. Recording rain gage located at station. Observations of specific conductance, pH and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--25 years (water years 1960-84), 35.9 ft^3/s (26,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft^3/s Apr. 15, 1963, gage height, 8.10 ft, from rating curve extended above 530 ft^3/s on basis of computation of peak flow over submerged weir; minimum, 10 ft^3/s Sept. 17, 18, 20, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,340 ft^3/s Apr. 19, gage height, 4.48 ft, no peak above base of 1,600 ft^3/s; minimum, 11 ft^3/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	22	18	15	22	18	16	20	15	12	12	12
2	33	21	19	14	57	30	14	18	14	12	14	21
3	31	21	26	14	19	18	12	21	14	12	13	14
4	30	22	23	14	18	18	12	21	14	12	26	14
5	112	22	19	132	16	18	12	53	14	12	15	12
6	36	21	18	27	16	16	12	43	15	11	14	14
7	30	20	18	23	23	16	12	23	14	11	13	12
8	28	20	18	26	22	16	12	21	14	12	13	12
9	27	19	19	20	18	16	12	21	14	42	12	13
10	26	19	19	18	16	15	14	20	16	29	13	11
11	28	23	18	18	16	15	16	20	15	16	13	11
12	43	58	17	18	16	15	14	20	14	15	13	12
13	29	37	17	35	15	15	21	18	14	14	28	11
14	28	30	16	23	38	15	15	18	14	14	14	11
15	44	27	16	21	45	15	14	18	15	13	12	57
16	23	24	16	20	25	15	14	17	18	12	12	16
17	23	22	15	20	20	14	14	18	18	12	12	15
18	22	21	15	18	20	14	14	18	15	12	12	18
19	26	21	15	18	39	14	182	16	15	12	12	15
20	41	40	15	20	23	14	67	16	14	15	11	14
21	27	56	15	21	21	18	65	15	15	30	11	14
22	26	27	15	18	21	14	26	20	15	15	11	14
23	25	23	15	28	20	14	22	16	14	14	14	13
24	23	22	20	22	20	13	49	16	14	14	13	13
25	23	22	21	20	20	12	32	15	13	14	14	14
26	29	22	18	20	20	12	28	16	14	14	14	16
27	28	21	15	20	18	12	25	23	13	13	15	15
28	23	20	15	18	18	12	22	16	12	14	12	16
29	22	20	15	18	18	14	21	15	12	12	11	15
30	22	18	15	18	---	15	20	15	12	12	11	14
31	21	---	15	18	---	14	---	15	---	12	11	---
TOTAL	974	761	536	735	660	477	809	622	430	464	421	459
MEAN	31.4	25.4	17.3	23.7	22.8	15.4	27.0	20.1	14.3	15.0	13.6	15.3
MAX	112	58	26	132	57	30	182	53	18	42	28	57
MIN	21	18	15	14	15	12	12	15	12	11	11	11
AC-FT	1930	1510	1060	1460	1310	946	1600	1230	853	920	835	910

CAL YR 1983 TOTAL 8945 MEAN 24.5 MAX 137 MIN 15 AC-FT 17740
WTR YR 1984 TOTAL 7348 MEAN 20.1 MAX 182 MIN 11 AC-FT 14570

16302000 PUNALUU DITCH NEAR PUNALUU

LOCATION.--Lat 21°33'41", long 157°54'10", Hydrologic Unit 20060000, on right bank 800 ft downstream from intake, 1.5 mi west of Kahana, and 1.7 mi southwest of Punaluu.

PERIOD OF RECORD.--May 1953 to current year.

REVISED RECORDS.--WSP 1719: 1954-55.

GAGE.--Water-stage recorder. Altitude of gage is 200 ft, from topographic map.

REMARKS.--Records poor. Ditch diverts from Punaluu Stream for irrigation in Punaluu Valley.

AVERAGE DISCHARGE.--31 years, 7.29 ft³/s (5,280 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 54 ft³/s Oct. 31, 1964; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 6.0 ft³/s Oct. 7, May 8; minimum daily, 0.23 ft³/s Jan. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.0	2.0	4.4	1.5	2.4	1.4	2.2	2.4	2.4	2.8	4.3
2	2.5	4.0	2.0	3.8	.64	1.4	1.8	1.8	4.6	2.1	1.9	4.4
3	2.0	4.0	3.0	2.8	.43	1.9	2.4	2.1	4.2	1.9	4.1	4.2
4	2.0	3.0	3.0	1.9	.40	2.7	4.4	2.1	3.3	2.4	3.9	5.0
5	1.8	3.0	3.0	.72	.33	3.0	4.2	2.8	4.4	4.7	3.8	4.2
6	5.0	4.0	2.0	.23	.31	3.7	3.1	1.8	4.7	5.8	3.3	3.3
7	6.0	5.0	2.0	1.9	.40	3.1	4.7	1.7	3.3	4.7	2.8	3.3
8	4.0	4.0	2.0	2.9	.36	2.9	3.9	6.0	2.8	3.3	4.3	4.0
9	5.0	4.0	1.0	2.0	.36	2.4	2.6	5.0	3.5	2.2	3.7	4.2
10	5.0	4.0	1.0	1.4	.33	1.9	2.0	2.0	4.3	3.6	3.4	3.3
11	3.0	2.0	1.0	1.2	.57	1.6	1.8	1.0	3.4	4.0	4.1	3.0
12	2.5	1.8	1.0	.40	2.3	1.4	2.7	3.4	3.0	3.8	4.2	2.4
13	.90	2.0	1.0	.40	2.7	1.2	4.1	4.4	2.5	2.4	2.6	3.9
14	.78	2.0	1.0	.40	1.8	1.1	3.8	3.9	3.3	1.9	5.0	4.4
15	2.2	2.0	1.0	3.9	1.2	3.5	3.4	3.0	3.3	4.2	4.2	4.4
16	3.1	1.0	.65	4.0	.87	5.0	3.1	3.0	1.9	4.4	4.2	5.0
17	2.4	1.0	.61	2.4	.82	3.6	2.8	3.0	2.5	3.3	5.0	4.7
18	1.6	1.0	.61	2.0	.78	2.5	2.3	3.0	2.4	4.7	4.7	4.2
19	1.3	1.0	.61	2.0	1.7	2.2	1.9	3.8	2.4	4.7	4.8	4.2
20	1.2	1.8	4.1	1.4	1.8	1.8	4.1	5.6	2.4	4.2	4.2	4.2
21	1.1	2.0	4.2	1.5	2.8	1.8	3.5	4.8	1.9	.81	3.3	4.0
22	1.9	3.0	2.7	1.4	2.7	1.4	2.9	3.4	1.8	.61	2.8	5.0
23	2.8	2.0	2.4	.97	2.2	1.0	2.6	3.0	3.8	4.7	2.4	4.7
24	2.3	2.0	3.1	.65	2.4	.78	2.4	3.0	4.2	5.0	2.4	4.2
25	1.9	2.0	.73	.65	3.4	.78	1.5	3.8	3.3	4.9	3.3	3.8
26	3.1	3.0	.73	.65	3.0	.87	1.5	4.8	2.4	3.8	3.8	3.3
27	2.4	4.0	.69	2.5	2.0	3.7	4.8	4.4	2.4	4.9	2.8	3.3
28	3.0	4.0	.69	2.6	1.6	4.2	4.8	3.9	1.6	3.8	4.9	2.9
29	4.0	3.0	.65	2.2	1.6	2.8	3.6	3.3	1.4	3.3	5.0	4.8
30	4.0	3.0	.61	2.2	---	2.8	2.8	3.0	2.3	4.7	4.7	5.3
31	4.0	---	3.0	1.4	---	2.9	---	2.9	---	4.2	3.8	---
TOTAL	85.78	81.6	52.08	56.87	41.30	72.33	90.9	101.9	89.7	111.42	116.2	121.9
MEAN	2.77	2.72	1.68	1.83	1.42	2.33	3.03	3.29	2.99	3.59	3.75	4.06
MAX	6.0	5.0	4.2	4.4	3.4	5.0	4.8	6.0	4.7	5.8	5.0	5.3
MIN	.78	1.0	.61	.23	.31	.78	1.4	1.0	1.4	.61	1.9	2.4
AC-FT	170	162	103	113	82	143	180	202	178	221	230	242

CAL YR 1983 TOTAL 103 .20 MEAN 2.83 MAX 8.3 MIN .61 AC-FT 2050
WTR YR 1984 TOTAL 1021.98 MEAN 2.79 MAX 6.0 MIN .23 AC-FT 2030

16303000 PUNALUU STREAM NEAR PUNALUU

LOCATION.--Lat 21°33'33", long 157°54'06", Hydrologic Unit 20060000, on left bank at Punaluu ditch diversion dam, 1.4 mi west of Kahana, and 1.8 mi southwest of Punaluu.

DRAINAGE AREA.--2.78 mi².

PERIOD OF RECORD.--May 1953 to current year.

REVISED RECORDS.--WSP 1569: Drainage area. WRD Hawaii 1974: 1971-72(P), 1973(M). WDR HI-78-1: 1954(M), 1955-70(P).

GAGE.--Water-stage recorder and masonry control. Altitude of gage is 212 ft, from topographic map.

REMARKS.--Records poor. Records do not include flow of Punaluu ditch (see sta 16302000). Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--31 years, 17.7 ft³/s (12,820 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,700 ft³/s July 17, 1974, gage height, 7.60 ft, from rating curve extended above 170 ft³/s on basis of slope-area measurements at gage heights 5.77 ft and 7.60 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft³/s Apr. 19, gage height, 3.78 ft, no other peak above base of 930 ft³/s; minimum, 4.4 ft³/s July 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	11	12	7.7	19	10	10	13	9.6	8.6	8.2	6.3
2	16	10	12	8.2	24	22	9.6	13	6.8	8.6	9.1	7.7
3	16	10	15	8.6	14	12	8.2	13	6.8	9.1	6.8	6.8
4	16	11	13	9.6	13	10	6.8	13	7.7	8.6	9.1	6.0
5	55	11	12	57	13	9.1	6.8	18	6.8	6.3	8.2	6.8
6	18	10	12	16	12	8.6	7.7	16	6.3	5.3	7.7	7.7
7	16	9.1	12	12	19	9.1	6.3	13	7.7	6.3	8.2	7.7
8	12	10	12	11	15	9.6	6.8	10	8.2	7.7	6.3	7.2
9	10	10	13	11	13	10	8.2	10	7.7	44	6.3	6.8
10	9.6	10	12	11	13	10	9.1	12	6.8	14	7.7	7.7
11	12	24	12	11	12	10	9.6	13	7.7	7.7	6.8	8.2
12	19	40	12	12	9.6	11	7.9	9.6	8.2	8.2	7.2	8.6
13	23	26	12	16	8.6	11	7.2	8.6	8.6	8.6	19	6.8
14	15	15	12	14	21	11	7.2	9.1	7.7	9.1	7.2	6.3
15	13	13	12	10	26	8.6	7.7	10	7.7	6.8	6.8	17
16	12	13	11	9.1	16	6.8	7.7	10	9.1	6.8	6.8	6.0
17	12	13	11	9.6	14	7.7	8.2	10	8.6	7.7	6.0	6.3
18	12	13	11	10	16	8.6	8.6	10	8.6	6.3	6.3	6.8
19	16	13	11	10	24	9.1	144	9.1	8.6	6.3	6.3	6.8
20	20	27	8.4	11	13	9.6	26	7.7	8.6	11	6.8	6.8
21	16	27	8.2	11	10	9.6	29	8.2	9.1	28	7.7	6.8
22	13	15	9.1	11	9.1	9.6	16	9.6	9.1	12	8.2	6.0
23	12	15	9.1	22	9.6	10	14	10	7.2	8.2	8.6	6.3
24	12	15	7.6	13	9.6	10	32	10	6.8	7.7	8.6	6.8
25	12	14	13	12	8.6	10	19	8.2	7.7	6.8	7.7	7.2
26	13	12	12	12	9.1	10	21	7.2	8.6	7.2	7.2	7.7
27	15	10	12	9.6	9.6	7.7	14	7.7	8.6	6.3	8.2	7.7
28	13	10	11	9.1	10	7.2	12	8.2	9.1	7.2	6.0	7.7
29	11	11	11	10	10	8.6	12	8.6	9.6	7.7	6.0	6.0
30	10	11	11	10	---	8.2	12	9.1	8.6	6.3	6.3	5.7
31	10	---	9.1	11	---	8.2	---	9.1	---	6.8	7.2	---
TOTAL	483.6	439.1	350.5	395.5	400.8	302.9	494.6	324.0	242.2	301.2	238.5	218.2
MEAN	15.6	14.6	11.3	12.8	13.8	9.77	16.5	10.5	8.07	9.72	7.69	7.27
MAX	55	40	15	57	26	22	144	18	9.6	44	19	17
MIN	9.6	9.1	7.6	7.7	8.6	6.8	6.3	7.2	6.3	5.3	6.0	5.7
AC-FT	959	871	695	784	795	601	981	643	480	597	473	433

CAL YR 1983 TOTAL 5119.6 MEAN 14.0 MAX 55 MIN 7.6 AC-FT 10150
WTR YR 1984 TOTAL 4191.1 MEAN 11.5 MAX 144 MIN 5.3 AC-FT 8310

16304200 KALUANUI STREAM NEAR PUNALUU

LOCATION.--Lat 21°35'22", long 157°54'38", Hydrologic Unit 20060000, on right bank 0.8 mi downstream from Sacred Falls, 1.6 mi west of Punaluu Beach Park, and 1.7 mi south of cemetery in Hauula.

DRAINAGE AREA.--1.11 mi^2.

PERIOD OF RECORD.--May 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 110 ft, from topographic map.

REMARKS.--Records fair. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 4.12 ft^3/s (2,980 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,390 ft^3/s Jan. 6, 1982, gage height, 11.90 ft, from rating curve extended above 14 ft^3/s on basis of slope-area measurements at gage heights 8.85 ft and 10.0 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 214 ft^3/s Apr. 19, gage height, 7.32 ft, no peak above base of 500 ft^3/s; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	2.6	1.2	.06	6.4	.51	3.8	.87	.98	.44	.37	.00
2	1.9	3.0	.65	.04	8.5	10	.70	.82	.37	.22	.28	2.2
3	2.1	1.6	5.4	.04	1.2	.85	.35	3.3	.20	.19	.25	.31
4	3.4	5.8	1.3	.02	.69	1.5	.21	1.5	.16	.19	8.6	.08
5	22	3.1	.52	46	.53	.64	.10	3.3	.12	.26	.89	4.5
6	1.8	2.2	.41	2.3	.53	.37	1.2	3.3	.16	.14	.34	2.3
7	1.4	1.4	.33	2.5	5.3	.31	.43	.75	.14	.21	.18	.45
8	1.1	1.6	.30	2.9	2.0	.25	.22	.87	.12	.13	.12	.34
9	.92	1.1	5.9	.75	1.0	.22	.99	.97	.49	27	.08	.59
10	.95	1.1	2.1	.45	.93	.20	5.0	.48	3.5	3.8	.06	.34
11	2.3	13	.65	.34	.71	.16	5.6	.47	1.4	.74	.20	.28
12	5.7	15	.40	1.6	.47	.16	.82	1.4	.64	.41	.25	.45
13	6.0	6.0	2.4	16	.42	.12	7.0	.45	.91	.31	2.6	.25
14	1.4	4.0	.86	2.1	13	.10	1.7	.28	.31	.28	.49	.16
15	1.7	2.5	.40	1.5	15	.08	1.1	.45	1.7	.22	.18	1.5
16	.98	1.7	.27	.86	1.9	.07	.57	.41	4.6	.25	.10	.74
17	1.1	1.3	.22	.60	1.9	.06	1.1	.49	1.6	1.3	.05	.22
18	1.3	1.0	.17	.46	7.2	.31	1.2	.85	.54	.41	.08	.45
19	11	3.2	.17	.39	14	.74	56	.37	.34	.59	.03	.34
20	12	7.7	.13	.32	2.1	.21	6.3	.34	.25	9.0	.00	.12
21	3.1	8.3	.11	.70	1.5	.09	12	.22	.22	16	.00	.05
22	2.3	1.5	.12	.37	1.0	.05	2.4	1.6	.59	1.2	.00	.00
23	2.1	1.5	.08	7.3	.91	.02	1.6	1.5	.22	.54	.00	.00
24	1.6	1.6	2.2	2.5	.88	.00	13	.91	.20	.37	.54	.00
25	1.3	1.3	3.8	1.4	.88	.00	2.2	.41	.17	.37	.22	.00
26	7.0	1.5	1.8	.89	2.2	.00	3.2	.34	.41	.25	.20	.06
27	2.1	.83	.33	1.3	1.0	.00	1.9	.34	.37	.20	.22	.48
28	1.9	.64	.17	.78	1.7	.52	1.1	.34	.20	.22	.08	.24
29	1.2	1.5	.22	.46	1.1	6.2	.85	.28	1.5	.25	.00	.30
30	1.4	.74	.13	.53	---	2.3	.70	.74	.88	.16	.00	.09
31	1.6	---	.08	2.4	---	.45	---	.31	---	.14	.00	---
TOTAL	111.15	98.31	32.82	97.86	94.95	26.49	133.34	28.66	23.29	65.79	16.41	16.84
MEAN	3.59	3.28	1.06	3.16	3.27	.85	4.44	.92	.78	2.12	.53	.56
MAX	22	15	5.9	46	15	10	56	3.3	4.6	27	8.6	4.5
MIN	.92	.64	.08	.02	.42	.00	.10	.22	.12	.13	.00	.00
AC-FT	220	195	65	194	188	53	264	57	46	130	33	33

CAL YR 1983	TOTAL	898.78	MEAN	2.46	MAX	30	MIN	.00	AC-FT	1780
WTR YR 1984	TOTAL	745.91	MEAN	2.04	MAX	56	MIN	.00	AC-FT	1480

16325000 KAMANANUI STREAM AT PUPUKEA MILITARY ROAD, NEAR MAUNAWAI

LOCATION.--Lat 21°37'25", long 158°01'04", Hydrologic Unit 20060000, on right bank 75 ft upstream from Pupukea Military Road and 3.5 mi southeast of Maunawai.

DRAINAGE AREA.--3.13 mi^2.

PERIOD OF RECORD.--June 1963 to current year. Occasional low-flow measurements, water years 1961 and 1963.

GAGE.--Water-stage recorder and combination pipe culverts and paved road control. Altitude of gage is 590 ft, from topographic map.

REMARKS.--Records poor. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 10.5 ft^3/s (7,610 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,390 ft^3/s Jan. 30, 1975, gage height, 10.06 ft, from rating curve extended above 42 ft^3/s on basis of slope-area measurement at gage height 10.06 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 345 ft^3/s Jan. 5, gage height, 5.56 ft, no peak above base of 950 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	3.3	2.3	1.1	12	1.6	9.0	1.3	.78	.32	.00	.00
2	4.5	5.5	2.7	1.0	14	20	7.0	1.4	1.8	.28	.00	.00
3	3.4	4.1	2.1	.96	5.3	8.0	3.0	1.5	1.1	.24	.00	.00
4	3.0	6.0	5.5	6.0	2.5	4.0	1.9	2.0	.62	.16	6.2	.00
5	18	6.3	2.5	140	1.7	4.5	1.5	2.0	.47	.13	4.6	.00
6	5.1	6.1	2.0	25	1.5	2.4	1.3	2.5	.42	.10	1.4	.00
7	3.2	3.7	1.8	10	1.4	1.8	3.5	2.1	.42	.07	.67	.00
8	2.9	2.7	1.8	5.0	2.4	1.5	2.0	1.4	.47	.10	.37	.00
9	2.2	2.3	1.8	3.7	2.6	1.4	1.7	1.2	.62	.28	.28	.00
10	4.3	2.1	2.3	2.7	1.8	1.3	7.0	.96	1.8	12	.24	.00
11	4.0	25	3.0	2.0	1.5	1.3	16	.90	2.5	1.6	.20	.00
12	5.2	112	2.0	1.7	1.2	1.2	5.0	.93	1.1	.57	.13	.00
13	14	24	6.0	7.0	1.1	1.1	6.0	.96	1.0	.42	.61	.00
14	4.1	9.5	9.5	9.0	21	1.1	7.0	.96	.72	.20	1.9	.00
15	2.9	6.7	2.8	5.0	43	1.0	3.0	1.1	.32	.13	.62	.00
16	2.8	5.6	2.1	4.0	13	.96	2.4	1.3	11	.13	.20	.00
17	2.1	4.8	1.8	2.0	6.7	1.2	2.0	1.2	6.8	.10	.13	.00
18	2.6	4.0	1.7	1.6	9.5	1.0	1.6	2.3	2.7	.07	.07	.00
19	21	3.7	1.5	1.5	33	1.5	25	1.8	1.1	.16	.03	.00
20	30	5.1	1.4	1.3	8.2	1.2	90	1.3	.67	.42	.01	.00
21	9.8	14	1.3	1.3	5.0	1.0	30	.96	.57	9.5	.00	.00
22	5.0	5.9	1.2	1.2	3.7	.90	12	1.2	.47	2.4	.00	.00
23	4.7	4.1	1.4	1.4	2.7	.84	7.0	2.3	.42	.90	.00	.00
24	3.8	3.8	1.2	6.5	2.3	1.1	4.4	2.2	.37	.47	.00	.00
25	4.7	3.2	1.6	3.3	1.9	.96	3.3	1.5	.42	.24	.00	.00
26	10	3.0	2.9	2.3	2.2	.84	2.1	.96	.47	.13	.00	.00
27	9.4	2.9	2.3	2.8	2.7	.76	2.5	.72	.72	.07	.00	.00
28	3.8	2.5	1.7	3.2	2.3	.86	1.8	.62	.90	.05	.00	.00
29	2.9	2.9	1.5	1.8	1.9	1.2	1.6	.72	.57	.01	.00	.00
30	2.8	2.9	1.3	1.7	---	2.0	1.5	.84	.42	.01	.00	.00
31	3.2	---	1.2	2.6	---	2.7	---	.72	---	.01	.00	---
TOTAL	203.0	287.7	74.2	258.66	208.1	71.22	262.1	41.85	41.74	31.37	17.66	.00
MEAN	6.55	9.59	2.39	8.34	7.18	2.30	8.74	1.35	1.39	1.01	.57	.00
MAX	30	112	9.5	140	43	20	90	2.5	11	12	6.2	.00
MIN	2.1	2.1	1.2	.96	1.1	.76	1.3	.62	.32	.01	.00	.00
AC-FT	403	571	147	513	413	141	520	83	83	62	35	.00

CAL YR 1983	TOTAL	1992.34	MEAN	5.46	MAX	112	MIN	.18	AC-FT	3950
WTR YR 1984	TOTAL	1497.60	MEAN	4.09	MAX	140	MIN	.00	AC-FT	2970

NOTE.--No gage-height record Dec. 9 to Jan. 17, Feb. 23 to Apr. 25.

16330000 KAMANANUI STREAM AT MAUNAWAI

LOCATION.--Lat 21°38'20", long 158°03'27", Hydrologic Unit 20060000, on right bank 0.5 mi upstream from Kamehameha Highway, 4.9 mi northeast of Waialua School, and 7.3 mi southwest of Kahuku School.

DRAINAGE AREA.--12.36 mi^2, revised, including that of Elehaha Stream which is mostly diverted into Kamananui Stream since June 14, 1975.

PERIOD OF RECORD.--February 1958 to current year.

REVISED RECORDS.--WSP 1937: 1958-60. WRD Hawaii 1974: 1971(P), 1972-73(M). WDR HI-81-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft, from topographic map. Prior to May 13, 1965, at datum 2.00 ft higher and May 13, 1965, to May 17, 1966, at datum 1.00 ft higher.

REMARKS.--Records fair except those for periods of no gage-height record, which are poor. Small diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--26 years, 17.4 ft^3/s (12,610 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft^3/s Mar. 18, 1980, gage height, 11.46 ft, from rating curve extended above 150 ft^3/s on basis of slope-area measurements at gage heights 5.68 ft and 11.46 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 680 ft^3/s Jan. 5, gage height, 4.51 ft, no peak above base of 1,300 ft^3/s; no flow Sept. 16-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	4.0	2.2	.49	11	1.6	10	1.2	.40	.03	.02	.02
2	6.3	6.0	2.8	.41	16	27	9.0	1.2	.40	.01	.02	.01
3	4.1	4.5	2.1	.38	6.0	9.0	3.3	1.1	.84	.01	.02	.01
4	3.3	5.0	6.0	.33	2.5	4.7	1.6	1.4	.40	.02	1.6	.01
5	21	8.0	4.0	178	1.5	4.7	1.0	2.0	.21	.01	9.0	.01
6	8.9	6.0	2.2	36	1.3	2.5	.92	1.4	.08	.02	2.3	.01
7	3.8	4.5	1.6	7.7	1.1	1.7	4.1	2.5	.04	.02	.92	.01
8	3.2	3.2	1.4	5.1	1.1	1.4	2.0	1.3	.03	.01	.46	.02
9	2.6	2.5	1.3	4.4	3.4	1.3	1.3	1.0	.02	.02	.17	.02
10	3.1	2.1	2.5	2.4	1.9	1.1	9.4	.84	.02	11	.06	.01
11	4.3	30	2.8	1.7	1.4	1.0	19	.68	1.0	3.5	.02	.01
12	5.2	150	1.7	1.4	1.0	.92	5.7	.60	.92	1.2	.02	.01
13	13	50	6.8	8.4	.74	.84	7.4	.46	.53	.53	.02	.01
14	5.7	14	10	11	21	.84	8.4	.40	.40	.29	1.0	.01
15	3.3	8.0	3.0	5.5	104	.76	3.3	.40	.29	.12	1.2	.01
16	2.8	7.0	1.7	4.6	25	.68	2.3	.40	2.5	.04	.53	.00
17	2.2	6.0	1.3	2.5	10	.84	1.6	.53	6.4	.03	.21	.00
18	1.9	5.0	1.1	1.7	10	.76	1.3	.53	3.3	.03	.05	.00
19	6.0	4.0	.96	1.3	67	1.2	44	2.1	1.4	.03	.04	.00
20	3.5	6.0	.90	1.1	14	.84	109	1.0	.53	.03	.03	.00
21	12	16	.86	.82	6.7	.76	43	.60	.29	6.3	.04	.00
22	7.0	7.0	.82	.74	4.1	.60	15	.53	.18	4.2	.05	.00
23	5.4	5.0	.86	.74	3.0	.53	8.2	1.4	.08	1.5	.03	.00
24	4.5	4.4	.80	4.0	2.4	.76	4.9	1.5	.03	.68	.02	.00
25	5.6	3.7	.98	2.6	2.1	.53	4.5	1.7	.01	.40	.02	.00
26	12	3.2	3.1	1.9	2.4	.46	3.4	1.0	.01	.18	.02	.00
27	10	2.7	2.4	2.2	3.2	.34	3.1	.53	.01	.04	.02	.00
28	6.0	2.5	1.4	2.5	2.7	.40	2.5	.34	.01	.02	.01	.00
29	4.0	3.0	.94	1.4	2.0	.68	1.7	.29	.06	.02	.02	.00
30	3.2	3.6	.72	1.2	---	1.6	1.4	.29	.10	.02	.01	.00
31	3.5	---	.57	4.0	---	2.8	---	.25	---	.02	.01	---
TOTAL	185.4	376.9	69.81	296.51	328.54	73.14	332.32	29.47	20.49	30.33	17.94	.18
MEAN	5.98	12.6	2.25	9.56	11.3	2.36	11.1	.95	.68	.98	.58	.006
MAX	21	150	10	178	104	27	109	2.5	6.4	11	9.0	.02
MIN	1.9	2.1	.57	.33	.74	.34	.92	.25	.01	.01	.01	.00
AC-FT	368	748	138	588	652	145	659	58	41	60	36	.4

CAL YR 1983	TOTAL	2485.44	MEAN	6.81	MAX	150	MIN	.03	AC-FT	4930
WTR YR 1984	TOTAL	1761.03	MEAN	4.81	MAX	178	MIN	.00	AC-FT	3490

NOTE.--No gage-height record Oct. 19 to Dec. 6, Jan. 25 to Feb. 6.

16345000 OPAEULA STREAM NEAR WAHIAWA

LOCATION.--Lat 21°33'55", long 158°00'10", Hydrologic Unit 20060000, on left bank 4.3 mi northeast of Leilehua High School in Wahiawa and 8.1 mi east of Waialua School.

DRAINAGE AREA.--2.98 mi².

PERIOD OF RECORD.--August 1959 to current year.

REVISED RECORDS.--WSP 1937: 1960.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,120 ft, from topographic map.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--25 years, 13.6 ft³/s (9,850 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,540 ft³/s July 17, 1974, gage height, 11.94 ft from rating curve extended above 110 ft³/s on basis of slope-area measurements at gage heights 6.74 ft and 10.12 ft; no flow Jan. 24, 25, 1977, Feb. 18, 1978, Aug. 26, 27, Sept. 27-30, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s Apr. 19, gage height, 6.13 ft, no peak above base of 1,200 ft³/s; no flow Aug. 26, 27, Sept. 27-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	8.2	2.8	.69	22	2.0	10	2.8	1.7	2.2	.24	.13
2	8.7	7.5	2.3	.58	27	21	6.8	3.4	2.6	1.6	.22	.10
3	6.9	6.7	2.4	.51	5.7	5.3	2.7	3.2	1.8	.93	.39	.08
4	11	12	2.1	.45	3.3	3.2	1.7	7.0	1.1	.71	15	.05
5	45	14	2.0	203	2.3	3.6	1.3	4.2	.74	.54	7.8	.49
6	8.1	7.2	1.9	21	1.9	2.2	1.4	8.6	.58	.45	2.5	1.8
7	4.9	5.4	1.6	5.1	1.7	1.5	5.8	4.3	.58	.45	1.2	2.3
8	4.5	4.1	1.5	3.2	7.4	1.3	2.3	2.5	.54	.42	.68	1.7
9	3.5	4.2	1.5	3.5	4.9	1.1	1.8	3.6	.58	4.3	.48	1.0
10	3.9	3.6	6.4	2.2	3.5	1.0	14	3.0	4.5	35	.36	.69
11	6.2	40	3.8	1.6	2.7	.99	24	2.0	4.4	3.7	.28	.69
12	9.5	120	2.1	1.3	2.1	1.2	5.9	1.7	3.6	1.7	.28	.74
13	54	33	2.0	22	1.6	.86	10	2.6	2.4	.95	6.5	.51
14	6.2	8.4	3.5	10	29	.78	9.[illegible]	1.8	3.0	.61	5.4	.39
15	4.6	5.6	2.6	4.7	61	.72	9.8	1.5	1.5	.45	1.8	.45
16	4.6	4.9	1.6	3.7	15	.66	4.4	1.4	15	.39	.87	3.5
17	3.3	4.7	1.2	2.4	7.3	.62	3.8	2.2	6.3	.45	.54	1.9
18	3.4	3.9	.99	1.8	14	.60	4.7	2.2	4.6	.54	.36	1.2
19	36	3.6	.93	1.6	82	.60	258	2.7	2.1	1.0	.26	.69
20	56	18	.89	1.4	9.9	.58	36	2.0	1.3	.89	.20	.48
21	17	47	.82	1.1	6.7	.54	63	1.5	.99	37	.15	.34
22	6.8	9.0	.75	1.6	4.2	.48	11	1.7	.87	7.4	.10	.26
23	6.2	4.9	.69	26	3.3	.45	6.6	5.3	1.2	2.8	.07	.18
24	5.5	4.7	.76	23	3.1	.39	28	7.1	1.1	1.6	.04	.13
25	5.1	4.3	8.3	6.0	2.9	.34	14	2.9	.73	1.7	.02	.09
26	30	3.8	8.7	8.0	4.9	.31	6.5	1.6	.63	1.7	.01	.05
27	59	3.3	3.4	4.4	6.0	.26	12	1.2	.60	.86	.34	.02
28	8.5	2.8	1.8	6.0	3.1	.51	4.8	1.3	1.4	.54	.31	.00
29	6.5	2.8	1.2	3.0	2.4	11	3.7	1.7	1.0	.39	.22	.00
30	6.0	4.7	.94	2.2	---	10	3.2	1.5	1.6	.31	.15	.00
31	5.4	---	.79	4.4	---	3.8	---	1.9	---	.26	.10	---
TOTAL	473.3	402.3	72.26	376.43	340.9	77.89	567.0	90.4	69.04	111.84	46.87	19.96
MEAN	15.3	13.4	2.33	12.1	11.8	2.51	18.9	2.92	2.30	3.61	1.51	.67
MAX	59	120	8.7	203	82	21	258	8.6	15	37	15	3.5
MIN	3.3	2.8	.69	.45	1.6	.26	1.3	1.2	.54	.26	.01	.00
AC-FT	939	798	143	747	676	154	1120	179	137	222	93	40

CAL YR 1983 TOTAL 2853.64 MEAN 7.82 MAX 120 MIN .01 AC-FT 5660
WTR YR 1984 TOTAL 2648.19 MEAN 7.24 MAX 258 MIN .00 AC-FT 5250

16400000 HALAWA STREAM NEAR HALAWA
(National stream-quality accounting network station)

LOCATION.--Lat 21°09'31", long 156°45'53", Hydrologic Unit 20050000, on right bank 600 ft downstream from Hipuapua Stream and 1.5 mi west of Halawa.

DRAINAGE AREA.--4.62 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1917 to July 1932, November 1937 to current year.

REVISED RECORDS.--WSP 1319: 1928, 1929(M), 1930-31, 1938-50(M), drainage area. WSP 1719: 1954.

GAGE.--Water-stage recorder. Altitude of gage is 210 ft, from topographic map. Prior to June 25, 1923, at site 350 ft upstream at different datum. June 25, 1923 to July 18, 1932, and Nov. 17, 1937, to Feb. 3, 1965, at present site at datum 2.00 ft higher.

REMARKS.--Records fair. No diversion above station.

AVERAGE DISCHARGE.--60 years (water years 1918-31, 1939-84), 29.2 ft³/s (21,160 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,900 ft³/s Feb. 4, 1965, gage height, 19.91 ft, from floodmarks, from rating curve extended above 105 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.76 ft³/s about Nov. 23, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,620 ft³/s Dec. 25, gage height, 7.89 ft, no peak above base of 1,900 ft³/s; minimum 1.3 ft³/s Sept. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	35	5.5	4.4	13	5.2	6.6	7.1	6.6	4.4	2.5	15
2	17	37	4.7	4.3	120	50	4.4	12	7.3	6.2	2.6	12
3	26	18	15	4.0	32	11	3.2	8.1	5.6	7.1	2.8	4.2
4	62	48	9.5	5.2	10	17	2.9	5.5	4.7	6.2	3.4	3.0
5	87	141	4.7	214	8.5	8.1	2.7	8.5	4.4	5.8	6.5	2.4
6	19	29	4.3	23	11	5.6	20	19	4.1	5.4	3.1	3.2
7	35	14	30	15	46	5.0	7.5	5.2	3.5	3.1	2.1	2.9
8	14	11	5.8	13	30	4.6	12	7.3	3.5	25	2.8	3.0
9	10	9.5	30	7.1	37	4.4	11	4.8	8.5	69	3.1	5.6
10	13	8.3	14	5.8	10	4.2	43	3.9	33	18	16	3.5
11	8.5	124	68	5.5	7.9	3.8	12	4.2	8.5	5.5	9.5	2.5
12	22	187	12	62	7.3	3.6	13	19	5.1	4.1	4.4	2.0
13	12	48	37	195	60	3.4	10	5.4	5.0	4.2	4.6	1.7
14	10	15	19	70	49	3.2	88	4.1	4.6	3.4	3.0	3.5
15	9.5	15	42	91	174	3.2	12	38	27	3.2	2.2	3.5
16	13	13	11	19	57	3.1	9.5	7.7	32	3.1	2.2	2.0
17	22	10	7.0	13	15	6.3	14	15	7.5	2.8	1.8	2.8
18	26	8.1	5.8	11	34	6.8	9.5	20	6.2	2.4	1.6	3.4
19	213	10	5.5	8.5	83	3.9	51	5.8	8.3	2.5	1.6	2.0
20	70	22	5.0	8.1	26	3.2	56	5.0	5.0	2.3	1.6	1.7
21	24	23	6.6	9.1	14	3.0	28	6.3	5.4	2.6	1.4	1.6
22	16	8.3	5.5	7.5	10	2.6	8.3	12	4.8	2.6	4.7	1.4
23	27	13	4.2	9.8	11	2.6	7.1	7.5	4.2	2.1	14	1.4
24	13	28	4.0	9.5	11	2.6	32	9.5	14	4.6	7.5	1.4
25	25	9.5	204	12	9.5	2.3	191	6.8	4.4	3.0	3.2	1.4
26	88	7.0	86	19	9.5	2.3	18	6.2	3.4	2.1	2.9	1.4
27	67	5.8	11	53	7.3	10	9.5	5.5	3.2	1.9	63	1.3
28	13	5.4	7.5	27	6.6	43	7.0	7.5	3.4	8.1	7.1	2.0
29	15	5.0	6.3	38	5.8	7.9	6.3	43	3.7	3.0	3.7	1.8
30	32	5.2	5.5	10	---	5.6	5.5	69	3.1	2.0	2.7	1.4
31	10	---	5.0	47	---	4.7	---	9.5	---	1.9	10	---
TOTAL	1044.0	913.1	681.4	1020.8	916.4	242.2	701.0	388.4	240.0	217.6	197.6	95.0
MEAN	33.7	30.4	22.0	32.9	31.6	7.81	23.4	12.5	8.00	7.02	6.37	3.17
MAX	213	187	204	214	174	50	191	69	33	69	63	15
MIN	8.5	5.0	4.0	4.0	5.8	2.3	2.7	3.9	3.1	1.9	1.4	1.3
AC-FT	2070	1810	1350	2020	1820	480	1390	770	476	432	392	188

CAL YR 1983 TOTAL 8615.9 MEAN 23.6 MAX 292 MIN 2.1 AC-FT 17090
WTR YR 1984 TOTAL 6657.5 MEAN 18.2 MAX 214 MIN 1.3 AC-FT 13210

16400000 HALAWA STREAM NEAR HALAWA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-74, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 24...	1430	756	13	49	6.4	21.5	8.0	7.9	90	92	3400	7
DEC 12...	1430	760	9.9	44	5.6	21.0	12	9.0	101	290	4000	8
FEB 06...	1215	756	16	57	6.9	17.5	2.9	9.4	99	39	2400	9
APR 16...	1300	759	12	68	6.7	19.5	2.9	9.2	101	64	790	10
JUN 04...	1330	--	4.8	59	6.1	22.5	2.9	8.4	--	20	1100	7
AUG 27...	1230	755	45	55	5.8	22.0	21	8.3	96	3100	5000	9

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 24...	0	1.1	.99	6.1	64	1	.60	7.0	--	10	<.10
DEC 12...	0	1.6	.96	5.5	58	.9	.50	7.0	--	8.5	<.10
FEB 06...	0	1.4	1.3	7.2	62	1	.60	8.0	4.5	12	<.10
APR 16...	5	1.5	1.6	7.7	60	1	.70	5.0	4.4	14	<.10
JUN 04...	1	1.3	1.0	5.9	60	1	.80	6.0	4.3	10	<.10
AUG 27...	4	1.4	1.3	7.0	60	1	.70	5.0	9.1	10	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT 24...	6.1	41	--	.06	<.10	.070	.80	.030	.030	<.010	180
DEC 12...	4.5	22	--	.03	<.10	<.010	.60	.040	.010	<.010	--
FEB 06...	7.7	37	40	.05	<.10	<.010	.20	<.010	<.010	.010	110
APR 16...	5.2	49	38	.07	<.10	<.010	.40	.020	.010	.020	80
JUN 04...	6.4	36	33	.05	<.10	.050	.40	.010	.030	.030	--
AUG 27...	3.2	39	38	.05	<.10	.060	.30	.060	.010	<.010	230

< Actual value is known to be less than the value shown.

16400000 HALAWA STREAM NEAR HALAWA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT 24...	<1	4	<.5	<1	<1	<3	1	270	3	<4	3
FEB 06...	<1	5	<.5	<1	<1	<3	<1	130	2	<4	3
APR 16...	<1	5	.9	<1	<1	<3	<1	98	<1	<4	4
AUG 27...	<1	6	1	<1	<1	<3	2	350	4	6	10

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 24...	<.1	<10	1	<1	<1	15	<6	4
FEB 06...	<.1	<10	<1	<1	<1	19	<6	6
APR 16...	<.1	<10	<1	<1	<1	23	<6	6
AUG 27...	<.1	<10	<1	<1	<1	18	<6	6

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 24...	1430	6	.21	100
DEC 12...	1430	9	.24	100
FEB 06...	1215	2	.09	100
APR 16...	1300	3	.10	100
JUN 04...	1330	4	.05	100
AUG 27...	1230	23	2.8	100

< Actual value is known to be less than the value shown.

16404200 PILIPILILAU STREAM NEAR PELEKUNU

LOCATION.--Lat 21°08'08", long 156°53'09", Hydrologic Unit 20050000, on right bank 500 ft downstream from left-bank tributary, 1.9 mi south of former village of Pelekunu, and 5.8 mi north of Kamalo.

DRAINAGE AREA.--0.49 mi^2.

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,000 ft, from topographic map.

REMARKS.--Records fair. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 1.40 ft^3/s (1,080 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 835 ft^3/s Jan. 25, 1982, gage height, 4.25 ft, from rating curve extended above 6.2 ft^3/s on basis of slope-area measurement at gage height, 4.25 ft; minimum, 0.50 ft^3/s Sept. 2-8, 21-29, 1975, Nov. 26 to Dec. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38 ft^3/s Jan. 5, gage height, 2.50 ft, no peak above base of 100 ft^3/s; minimum, 0.58 ft^3/s, Sept. 22-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.84	.94	.76	.84	1.3	1.2	1.1	1.0	.84	.76	.68	.64
2	.89	.99	.76	.84	4.5	4.1	1.0	1.1	.84	.76	.68	.64
3	.94	.94	.76	.84	2.5	2.6	.99	1.1	.84	.76	.72	.64
4	1.2	.99	.76	.84	1.6	2.3	.99	1.0	.84	.72	.72	.64
5	1.2	1.2	.76	6.2	1.3	1.8	.99	1.0	.84	.72	.68	.61
6	.94	.94	.80	2.0	1.2	1.4	1.1	.99	.84	.72	.68	.61
7	.94	.89	.80	1.1	1.2	1.2	.99	.99	.84	.72	.68	.64
8	.89	.89	.76	.92	1.2	1.1	1.0	1.0	.84	.84	.68	.64
9	.84	.89	.76	.88	1.3	1.0	1.2	.99	.84	.76	.68	.64
10	.89	.89	.76	.91	1.2	1.0	2.2	.99	.89	.76	.72	.68
11	.80	1.2	.76	1.1	1.1	1.0	1.2	1.0	.84	.72	.72	.64
12	.84	1.8	.76	3.0	1.0	1.0	1.0	.99	.84	.72	.68	.64
13	.80	1.2	1.1	2.4	1.1	1.0	1.0	.94	.84	.72	.64	.61
14	.80	.94	.90	1.3	1.1	1.0	5.7	.99	.80	.72	.61	.61
15	.80	.94	.80	1.5	2.1	1.0	1.5	1.0	.84	.72	.61	.61
16	.94	.89	.80	1.1	1.7	1.0	1.2	.99	.84	.72	.61	.61
17	.89	.84	.76	.88	1.2	1.0	1.2	1.0	.80	.72	.61	.61
18	1.5	.84	.76	.81	2.1	1.0	1.2	.89	.80	.72	.61	.61
19	6.0	.94	.76	.80	3.0	.99	1.6	.89	.80	.72	.61	.61
20	1.9	.99	.76	.80	2.0	.99	2.8	.89	.80	.76	.61	.61
21	1.2	1.3	.76	.79	1.5	.99	1.6	.94	.84	.80	.64	.61
22	.99	.89	.76	.76	1.3	.99	1.3	.89	.80	.72	.72	.58
23	.99	.94	.78	.76	1.2	.99	1.2	.89	.80	.72	.68	.58
24	.94	.94	.85	.80	1.3	.99	1.3	.89	.80	.76	.68	.58
25	.94	.89	4.1	.76	1.2	.99	1.3	.84	.76	.72	.64	.58
26	2.4	.84	2.8	.76	1.3	.99	1.2	.84	.76	.72	.72	.58
27	4.1	.84	1.2	.90	1.2	1.2	1.1	.84	.76	.68	.72	.58
28	1.3	.80	1.1	1.1	1.2	1.7	1.1	.84	.76	.68	.68	.58
29	1.1	.80	.95	1.3	1.2	1.1	1.1	.99	.76	.68	.64	.58
30	1.1	.76	.90	1.5	---	1.0	1.0	.99	.76	.68	.64	.58
31	.99	---	.84	2.1	---	1.0	---	.89	---	.72	.64	---
TOTAL	40.89	29.14	30.88	40.59	45.1	39.62	42.16	29.58	24.45	22.64	20.63	18.37
MEAN	1.32	.97	1.00	1.31	1.56	1.28	1.41	.95	.81	.73	.67	.61
MAX	6.0	1.8	4.1	6.2	4.5	4.1	5.7	1.1	.89	.84	.72	.68
MIN	.80	.76	.76	.76	1.0	.99	.99	.84	.76	.68	.61	.58
AC-FT	81	58	61	81	89	79	84	59	48	45	41	36

CAL YR 1983 TOTAL 410.40 MEAN 1.12 MAX 6.0 MIN .76 AC-FT 814
WTR YR 1984 TOTAL 384.05 MEAN 1.05 MAX 6.2 MIN .58 AC-FT 762

16405100 MOLOKAI TUNNEL AT EAST PORTAL

LOCATION.--Lat 21°08'38", long 156°55'16", Hydrologic Unit 20050000, on left bank 100 ft downstream from the east portal, 5.3 mi southeast of Kalaupapa, and 7.5 mi northeast of Kaunakakai.

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 989 ft, from tunnel plans.

REMARKS.--Records good. Tunnel diverts from Waikolu Stream and two tributaries; diversion is augmented by water pumped from two wells and from the stream at elevation 728 ft in Waikolu Valley near the east portal. Water is used for irrigation in west-central Molokai. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--18 years, 3.38 ft³/s (2,450 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 35 ft³/s Oct. 19, 1983; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 35 ft³/s Oct. 19; minimum daily, 1.0 ft³/s Oct. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	4.5	3.5	1.4	3.7	1.3	2.5	1.8	4.8	5.1	3.8	3.6
2	4.7	7.7	3.4	1.3	25	25	2.0	3.2	4.5	5.8	3.8	4.9
3	4.9	5.8	3.6	1.3	11	6.1	1.5	3.1	4.3	4.8	3.7	6.0
4	8.3	4.7	3.5	2.4	3.1	6.4	1.3	2.0	4.2	5.2	3.8	6.0
5	9.4	10	3.4	27	2.2	4.2	1.2	1.6	4.1	5.1	3.8	5.9
6	3.1	5.0	3.4	11	2.1	4.4	2.1	1.5	4.1	4.9	3.8	5.9
7	3.0	2.5	3.4	3.8	2.8	4.1	2.8	1.3	4.1	4.8	3.8	5.9
8	2.5	1.8	3.4	3.0	4.6	4.0	3.4	2.2	4.1	4.4	3.7	5.9
9	1.9	1.6	3.4	2.8	8.9	4.0	12	4.7	4.2	4.6	3.7	5.8
10	1.9	1.6	3.4	2.9	4.9	3.8	24	4.6	5.0	4.1	3.8	5.9
11	1.6	7.8	3.4	3.8	4.2	3.8	11	4.4	6.9	4.1	4.5	5.7
12	1.1	18	3.5	17	4.0	3.7	5.3	4.4	4.8	4.0	4.0	5.7
13	1.0	6.7	9.0	20	4.3	3.6	4.9	4.3	3.6	3.8	3.8	5.7
14	1.0	3.3	7.5	7.4	6.7	3.6	31	4.3	2.8	1.6	3.7	5.7
15	1.2	4.4	4.8	8.8	20	3.6	11	4.9	2.7	1.6	3.7	5.7
16	3.5	4.2	3.0	5.6	8.7	3.6	6.6	5.1	2.9	2.3	3.7	5.7
17	6.9	4.0	1.7	3.5	5.2	3.6	6.3	5.5	2.8	3.9	3.7	5.7
18	14	3.9	1.3	3.6	12	3.6	9.6	7.3	2.4	3.9	3.6	5.7
19	35	3.8	1.2	3.2	21	3.5	14	4.9	3.2	3.9	3.6	5.7
20	13	5.5	1.1	3.0	14	3.4	21	4.7	4.0	3.9	3.6	5.7
21	4.7	8.5	1.1	2.9	4.9	3.4	12	5.4	5.1	3.9	3.6	5.6
22	2.7	2.3	1.1	2.9	2.3	3.4	6.6	6.5	5.1	3.8	3.7	5.6
23	4.3	2.5	1.1	2.9	2.0	2.0	6.0	5.4	4.4	3.9	3.6	5.6
24	4.1	3.3	1.2	5.7	2.0	1.1	5.6	4.9	4.5	3.8	3.6	5.6
25	5.8	2.4	31	3.5	2.0	1.1	5.7	4.6	4.1	3.8	3.6	5.7
26	14	1.6	25	5.3	1.9	1.1	5.5	4.4	3.6	3.9	3.7	5.6
27	22	1.4	4.9	6.7	1.7	1.6	5.3	4.2	3.6	3.8	4.1	5.7
28	6.2	1.3	2.3	4.6	1.5	18	5.0	4.3	3.9	3.8	3.8	5.6
29	4.7	1.2	1.9	4.8	1.5	5.3	5.8	12	4.4	3.8	3.6	5.6
30	6.4	2.5	1.6	9.5	---	2.3	3.3	15	5.1	3.8	3.6	5.6
31	4.9	---	1.5	15	---	1.7	---	6.1	---	3.8	3.6	---
TOTAL	202.7	133.8	143.6	196.6	188.2	140.3	234.3	148.6	123.3	123.9	116.1	169.0
MEAN	6.54	4.46	4.63	6.34	6.49	4.53	7.81	4.79	4.11	4.00	3.75	5.63
MAX	35	18	31	27	25	25	31	15	6.9	5.8	4.5	6.0
MIN	1.0	1.2	1.1	1.3	1.5	1.1	1.2	1.3	2.4	1.6	3.6	3.6
AC-FT	402	265	285	390	373	278	465	295	245	246	230	335

CAL YR 1983	TOTAL	1628.5	MEAN	4.46	MAX	35	MIN	1.0	AC-FT	3230
WTR YR 1984	TOTAL	1920.4	MEAN	5.25	MAX	35	MIN	1.0	AC-FT	3810

16405300 MOLOKAI TUNNEL AT WEST PORTAL

LOCATION.--Lat 21°07'27", long 156°59'50", Hydrologic Unit 20050000, on left bank 50 ft upstream from the west portal, 2.5 mi northeast of Kaunakakai, and 4.7 mi south of Kalaupapa.

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 970 ft, from tunnel plans.

REMARKS.--Records good. Tunnel diverts from Waikolu Stream and two tributaries; diversion is augmented by water pumped from two wells and from the stream at elevation 728 ft in Waikolu Valley near east portal and one well in the tunnel near east portal. Water is used for irrigation in west-central Molokai. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 5.77 ft^3/s (4,180 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 36 ft^3/s Oct. 19, 1983; minimum daily, 1.8 ft^3/s Oct. 15, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 36 ft^3/s Oct. 19; minimum dailv, 3.5 ft^3/s for several dayrs.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	6.9	5.9	3.7	6.1	3.7	4.7	4.5	7.4	7.4	6.4	6.6
2	7.1	10	5.9	3.7	24	25	4.7	5.7	6.9	7.1	8.2	7.4
3	7.4	8.5	5.9	3.7	15	9.0	4.3	5.9	6.6	7.1	6.6	9.1
4	8.7	7.1	5.9	4.5	5.4	8.8	4.1	5.0	6.6	7.1	6.1	8.2
5	13	12	5.9	26	4.5	6.6	3.9	4.5	6.4	7.1	6.1	7.1
6	5.9	7.9	5.9	15	4.1	6.9	4.3	4.3	6.1	7.1	6.9	7.1
7	5.2	5.4	5.9	6.4	4.3	6.9	5.4	4.1	6.1	6.9	7.4	7.1
8	5.0	4.3	5.9	5.4	6.4	6.6	5.9	4.5	6.1	6.9	7.4	7.4
9	4.5	4.1	5.9	5.2	10	6.6	14	7.7	6.1	6.9	7.1	7.4
10	4.5	4.1	5.9	5.2	6.9	6.6	25	7.4	6.9	6.4	7.1	7.4
11	4.3	8.4	5.9	6.1	6.1	6.6	13	7.1	9.1	7.1	7.7	7.4
12	3.5	20	5.9	17	5.9	6.6	8.2	7.1	6.9	6.9	7.4	7.6
13	3.5	10	11	23	6.1	6.4	6.9	7.1	5.7	6.6	7.1	9.4
14	3.5	5.7	10	10	8.3	6.4	31	6.9	4.7	4.5	7.1	9.1
15	3.7	6.9	7.4	11	20	6.1	14	7.4	5.0	4.3	7.1	9.1
16	5.4	6.6	5.7	8.5	11	6.1	9.4	7.7	5.0	4.7	7.1	9.1
17	9.7	6.6	4.3	5.9	7.7	6.1	8.8	7.4	5.2	6.6	7.1	8.8
18	13	6.4	3.9	5.9	11	5.9	11	10	4.7	6.6	7.1	8.8
19	36	6.1	3.7	5.7	23	5.9	16	7.4	5.2	6.4	7.1	8.8
20	17	7.4	3.7	5.4	16	5.9	24	7.1	6.4	6.4	7.1	8.8
21	7.4	11	3.5	5.4	7.8	5.9	15	7.4	7.3	6.4	7.1	8.5
22	5.4	5.0	3.5	5.2	4.7	5.9	9.7	8.8	7.5	6.4	7.1	8.5
23	6.4	4.7	3.5	5.2	4.3	4.7	8.8	7.9	6.9	6.4	6.9	8.5
24	6.4	5.4	3.5	8.0	4.3	3.5	8.5	7.1	6.9	6.3	6.9	8.5
25	8.5	5.0	31	6.1	4.3	3.5	8.5	6.9	6.6	6.1	6.9	8.5
26	14	4.3	28	7.7	4.3	3.5	8.5	6.9	5.9	6.1	6.9	8.5
27	26	3.9	7.7	9.1	4.1	3.7	8.2	6.6	5.9	6.1	7.1	8.5
28	9.4	3.7	4.7	7.1	3.9	19	7.7	6.6	6.1	6.1	6.9	8.5
29	7.4	3.7	4.3	6.9	3.7	8.2	8.2	12	6.2	6.1	6.6	8.5
30	8.5	4.3	4.1	10	---	5.0	6.6	19	7.6	6.4	6.6	8.5
31	7.7	---	3.9	17	---	4.3	---	8.8	---	6.1	6.6	---
TOTAL	275.7	205.4	218.2	265.0	243.2	215.9	308.3	226.8	190.0	198.6	216.8	246.7
MEAN	8.89	6.85	7.04	8.55	8.39	6.96	10.3	7.32	6.33	6.41	6.99	8.22
MAX	36	20	31	26	24	25	31	19	9.1	7.4	8.2	9.4
MIN	3.5	3.7	3.5	3.7	3.7	3.5	3.9	4.1	4.7	4.3	6.1	6.6
AC-FT	547	407	433	526	482	428	612	450	377	394	430	489

CAL YR 1983	TOTAL	2555.0	MEAN	7.00	MAX	36	MIN	3.5	AC-FT	5070
WTR YR 1984	TOTAL	2810.6	MEAN	7.68	MAX	36	MIN	3.5	AC-FT	5570

[illegible] AVAILABLE

16405500 WAIKOLU STREAM AT ALTITUDE 900 FT, NEAR KALAUPAPA

LOCATION.--Lat 21°08'43", long 156°55'18", Hydrologic Unit 20050000, on right bank 1.8 mi southwest of Haupu Bay, 2.3 mi upstream from mouth, and 5.2 mi southeast of Kalaupapa.

DRAINAGE AREA.--1.99 mi².

PERIOD OF RECORD.--May 1956 to October 1961, July 1962 to current year.

REVISED RECORDS.--WSP 1719: 1959. WSP 2137: 1965(P).

GAGE.--Water-stage recorder. Altitude of gage is 900 ft, from topographic map. Prior to July 1, 1962, at site 200 ft upstream at datum 6.14 ft higher.

REMARKS.--Records fair. Since Nov. 16, 1960, water diverted above station at times, either into or from Molokai tunnel. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since Molokai tunnel diversion began).--23 years (water years 1961, 1963-84), 7.07 ft³/s (5,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,570 ft³/s Jan. 25, 1982, gage height, 6.64 ft, from rating curve extended above 43 ft³/s on basis of slope-area measurement at gage height 5.24 ft; no flow Sept. 12-30, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 31, 1961, reached a stage of 13.62 ft, from floodmarks, former site and datum, discharge, 6,220 ft³/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 448 ft³/s Dec. 25, gage height, 3.34 ft, no peak above base of 590 ft³/s; no flow Sept. 12-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.21	.46	.77	1.1	.66	.50	.23	.34	.05	.36	.46
2	.32	.39	.36	.72	27	46	.51	.56	.28	.06	.42	.37
3	.57	.17	.32	.72	2.5	1.2	.51	.54	.26	.09	.45	.22
4	2.0	.29	.27	.74	.75	1.7	.52	.33	.21	.13	.51	.15
5	2.0	2.0	.26	64	.72	.76	.61	.34	.18	.18	.54	.17
6	.53	.64	.21	2.5	.72	.72	.65	.38	.20	.10	.52	.11
7	.55	.42	.21	.72	.72	.72	.61	.43	.20	.04	.42	.08
8	.53	.43	.18	.65	.73	.72	.74	.62	.38	.10	.45	.15
9	.61	.50	.19	.61	1.8	.72	3.0	.42	.28	.04	.50	.02
10	.61	.51	.17	.58	.75	.72	8.0	.42	.13	.10	.46	.02
11	.72	3.3	.21	.42	.72	.72	2.1	.44	.22	.13	.47	.01
12	.87	5.4	.21	12	.72	.64	.67	.47	.23	.20	.47	.00
13	.88	1.6	1.1	6.7	.75	.45	.63	.51	.10	.22	.42	.00
14	.75	.61	.49	.85	1.5	.35	57	.51	.09	.17	.50	.00
15	.67	.61	.19	1.2	6.3	.30	1.5	.54	.12	.21	.51	.00
16	.79	.61	.27	.30	1.4	.27	.92	.51	.15	.21	.55	.00
17	1.1	.62	.22	.31	.70	.23	3.4	.61	.21	.25	.52	.00
18	8.7	.71	.30	.40	4.8	.21	1.5	.87	.22	.25	.42	.00
19	79	.72	.34	.42	11	.18	2.3	.61	.23	.28	.44	.00
20	2.4	.79	.42	.46	2.9	.17	8.6	.61	.23	.27	.49	.00
21	.83	2.4	.38	.51	.61	.18	1.9	.61	.20	.27	.51	.00
22	.77	.74	.35	.51	.51	.20	.37	.61	.09	.28	.51	.00
23	.79	.84	.42	.53	.51	.16	.22	.62	.08	.33	.54	.00
24	.67	1.1	.82	1.1	.55	.26	.16	.61	.12	.32	.57	.00
25	.46	.82	60	.61	.61	.33	.15	.66	.05	.34	.61	.00
26	21	.72	36	1.1	.66	.35	.15	.61	.10	.34	.60	.00
27	22	.72	.74	1.9	.61	.42	.10	.61	.04	.38	.51	.00
28	.36	.72	.72	1.4	.61	7.9	.10	.61	.08	.42	.59	.00
29	.27	.72	.72	1.5	.66	.87	.07	2.3	.05	.42	.56	.00
30	.30	.66	.72	4.2	---	.50	.18	3.4	.05	.42	.51	.00
31	.21	---	.72	4.6	---	.47	---	.61	---	.38	.51	---
TOTAL	151.59	29.97	107.97	113.03	73.11	69.08	97.67	21.20	5.12	6.98	15.44	1.76
MEAN	4.89	1.00	3.48	3.65	2.52	2.23	3.26	.68	.17	.23	.50	.059
MAX	79	5.4	60	64	27	46	57	3.4	.38	.42	.61	.46
MIN	.21	.17	.17	.30	.51	.16	.07	.23	.040	.040	.36	.00
AC-FT	301	59	214	224	145	137	194	42	10	14	31	3.5

CAL YR 1983 TOTAL 773.62 MEAN 2.12 MAX 79 MIN .17 AC-FT 1530
WTR YR 1984 TOTAL 692.92 MEAN 1.89 MAX 79 MIN .00 AC-FT 1370

16408000 WAIKOLU STREAM BELOW PIPELINE CROSSING, NEAR KALAUPAPA

LOCATION.--Lat 21°09'45", long 156°55'54", Hydrologic Unit 20050000, on left bank 0.7 mi upstream from mouth and 4.4 mi southeast of Molokai Lighthouse near Kalaupapa.

DRAINAGE AREA.--3.68 mi^2.

PERIOD OF RECORD.--July 1919 to November 1930, August 1931 to July 1932, September 1937 to January 1948, July 1948 to current year. Prior to August 1931, published as "at pipeline crossing, near Kalaupapa."

REVISED RECORDS.--WSP 1155: 1932(M), 1938-44(M), 1946-48(M). WSP 1319: 1923(M), 1930(M), 1932, 1938-40, 1945(M), 1974-81(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252 ft above mean sea level (hand levels by Bureau of Reclamation). Prior to Nov. 19, 1930, at site 500 ft upstream at different datums. Aug. 14, 1931, to July 20, 1932, and Sept. 20, 1937, to Jan. 26, 1948, at present site at datum 1.49 ft higher, and July 30, 1948, to June 30, 1962, at present site at datum 1.00 ft higher.

REMARKS.--Records poor. Diversion above station for domestic use in Kalaupapa, and since Nov. 16, 1960, water has been diverted above station both to and from Molokai tunnel. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since Molokai tunnel diversion began).--24 years (water years 1961-84), 15.1 ft^3/s (10,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,740 ft^3/s Mar. 31, 1982, gage height, 7.63 ft, from rating curve extended above 59 ft^3/s on basis of slope-area measurement at gage height 6.68 ft; minimum, 2.0 ft^3/s Nov. 1, 2, 1925, June 5, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 19	0900	788	4.21	Jan. 5	1130	*1860	5.14
Dec. 25	1230	1240	4.67	Apr. 14	0300	1160	4.60

Minimum discharge, 2.9 ft^3/s July 23-29, Aug. 17, 18, Sept. 27-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	6.0	5.7	5.7	11	6.5	6.0	7.1	3.5	3.7	3.5	4.2
2	4.7	6.2	5.4	5.7	88	149	6.0	7.7	3.5	3.6	3.7	4.1
3	5.2	6.0	5.2	5.7	17	11	5.7	7.7	3.5	3.5	3.8	4.1
4	6.5	6.5	5.2	4.7	9.4	11	5.7	7.4	3.3	3.7	3.9	4.1
5	8.3	18	5.2	267	8.3	7.7	5.7	7.1	3.1	3.6	4.0	4.0
6	5.2	8.3	5.4	20	7.7	6.2	6.0	7.1	3.2	3.5	4.1	4.0
7	5.4	6.2	5.4	7.7	7.7	5.4	5.7	7.4	3.2	3.5	4.2	4.0
8	5.4	6.5	5.2	6.2	7.7	5.2	6.0	6.2	3.3	5.0	4.3	4.0
9	6.0	6.5	5.4	5.7	8.3	5.2	9.5	4.1	3.3	4.2	4.3	3.9
10	6.0	6.5	5.0	6.2	6.2	5.0	17	3.9	3.5	3.7	4.3	3.9
11	5.4	36	5.0	7.1	6.0	5.0	7.7	3.9	3.5	3.1	4.4	3.8
12	5.4	41	4.7	44	5.7	4.7	4.3	3.9	3.5	3.1	4.5	3.7
13	6.0	14	8.3	37	6.0	4.7	3.7	3.9	3.6	3.1	4.5	3.7
14	5.4	9.0	6.5	11	7.1	4.7	187	3.9	3.5	3.1	4.4	3.8
15	5.0	7.7	5.2	17	27	4.7	11	4.1	3.5	3.3	4.3	3.6
16	12	6.5	5.2	8.3	11	5.0	7.4	3.9	3.5	3.3	4.1	3.5
17	7.7	6.0	5.0	6.2	7.7	5.0	12	4.6	3.5	3.5	3.1	3.5
18	19	6.0	5.0	5.4	18	5.0	7.7	3.9	3.7	3.5	3.1	3.4
19	265	5.2	5.0	5.2	43	5.0	8.0	3.9	3.6	3.5	3.3	3.3
20	20	5.2	5.0	5.0	14	5.0	18	3.9	3.7	3.6	3.4	3.3
21	8.6	7.4	5.0	5.0	9.4	5.0	7.7	3.7	3.7	3.7	3.5	3.3
22	7.4	5.7	5.0	4.7	7.7	5.0	5.4	3.7	3.7	3.6	3.5	3.4
23	6.5	6.5	5.0	4.7	7.1	5.0	5.1	3.7	3.8	3.6	3.6	3.5
24	7.4	6.5	5.4	5.4	7.7	5.0	5.1	3.7	3.7	2.9	3.7	3.4
25	5.7	6.2	163	4.5	7.1	5.2	5.1	3.5	3.6	2.9	3.8	3.3
26	112	6.0	107	5.4	7.7	5.2	5.1	3.5	3.8	2.9	4.1	3.2
27	111	6.0	8.3	7.7	7.1	5.7	4.8	3.5	3.6	2.9	4.4	3.0
28	11	6.0	7.1	8.3	7.1	22	4.8	3.5	3.6	3.0	4.3	3.0
29	7.7	6.0	6.2	9.4	7.1	7.4	4.8	3.7	3.8	3.0	4.2	3.0
30	7.1	5.7	6.0	13	---	6.0	6.2	6.4	3.5	3.2	4.3	3.0
31	6.2	---	5.7	27	---	6.0	---	3.5	---	3.4	4.3	---
TOTAL	698.9	275.3	431.7	575.9	384.8	338.5	394.2	148.0	105.8	106.2	122.9	108.0
MEAN	22.5	9.18	13.9	18.6	13.3	10.9	13.1	4.77	3.53	3.43	3.96	3.60
MAX	265	41	163	267	88	149	187	7.7	3.8	5.0	4.5	4.2
MIN	4.7	5.2	4.7	4.5	5.7	4.7	3.7	3.5	3.1	2.9	3.1	3.0
AC-FT	1390	546	856	1140	763	671	782	294	210	211	244	214

CAL YR 1983 TOTAL 3727.8 MEAN 10.2 MAX 265 MIN 4.5 AC-FT 7390
WTR YR 1984 TOTAL 3690.2 MEAN 10.1 MAX 267 MIN 2.9 AC-FT 7320

16414000 KAUNAKAKAI GULCH AT KAUNAKAKAI

LOCATION.--Lat 21°06'21", long 157°00'34", Hydrologic Unit 20050000, on left bank 0.6 mi upstream from Molokai Ranch pipeline crossing, 1.3 mi northeast of Kaunakakai Post Office, and 1.7 mi upstream from mouth.

DRAINAGE AREA.--6.57 mi².

PERIOD OF RECORD.--December 1949 to current year. Prior to July 1958, published as Kaunakakai Stream at Kaunakakai.

REVISED RECORDS.--WSP 1289: 1950-51. WSP 1569: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 240 ft, from topographic map.

REMARKS.--Records fair. Flow has been augmented by occasional spillage from Molokai tunnel since May 1965.

AVERAGE DISCHARGE.--34 years (water years 1951-84), 1.60 ft³/s (1,160 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,060 ft³/s Oct. 31, 1961, gage height, 9.30 ft, from rating curve extended above 620 ft³/s on basis of slope-area measurements at gage heights 7.22 ft and 9.30 ft; no flow most of the time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 305 ft³/s Dec. 25, gage height, 4.70 ft, no other peak above base of 280 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	1.3	30	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	3.0	2.7	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	3.2	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	4.4	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	54	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	3.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	38	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	50	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.20	.00	1.2	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	58.01	.00	89.20	7.60	4.30	32.70	.28	.00	.00	.00	.00	.00
MEAN	1.87	.00	2.88	.25	.15	1.05	.009	.00	.00	.00	.00	.00
MAX	54	.00	50	4.4	3.0	30	.28	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	115	.00	177	15	8.5	65	.6	.00	.00	.00	.00	.00

CAL YR 1983	TOTAL	147.21	MEAN	.40	MAX	54	MIN	.00	AC-FT	292
WTR YR 1984	TOTAL	192.09	MEAN	.52	MAX	54	MIN	.00	AC-FT	381

16419500 PAPIO GULCH AT HALAWA

LOCATION.--Lat 21°08'55", long 156°44'16", Hydrologic Unit 20050000, on left bank 200 ft downstream from wooden bridge on Highway 45 and 0.8 mi south of Halawa.

DRAINAGE AREA.--0.94 mi².

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 640 ft, from topographic map.

REMARKS.--Records good. Diversion above station for domestic use at Puu O Hoku Ranch. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 0.790 ft³/s (572 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,720 ft³/s Apr. 13, 1965, gage height, 11.25 ft, from rating curve extended above 37 ft³/s on basis of slope-area measurements at gage heights 4.60 ft, 7.15 ft, and 11.25 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 178 ft³/s Apr. 25, gage height, 3.80 ft, no peak above base of 210 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.06	.02	.16	.33	.06	.00	.00	.00	.00	.00	.00
2	.16	.12	.02	.16	1.5	.76	.00	.00	.00	.00	.00	.00
3	.14	.14	.02	.33	.81	.59	.00	.04	.00	.00	.00	.00
4	.04	.30	.02	.24	.24	.27	.00	.06	.00	.00	.00	.00
5	1.7	2.3	.02	2.1	.14	.12	.00	.06	.00	.00	.00	.00
6	.35	.40	.01	.98	.12	.02	.00	.04	.00	.00	.00	.00
7	.16	.16	.01	.18	.27	.01	.00	.01	.00	.00	.00	.00
8	.10	.02	.01	.14	.16	.01	.00	.00	.00	.00	.00	.00
9	.06	.10	.11	.12	.16	.01	.00	.00	.00	.00	.00	.00
10	.03	.12	.10	.16	.12	.01	.00	.00	.00	.00	.00	.00
11	.02	.54	.62	.16	.10	.01	.00	.00	.00	.00	.00	.00
12	.02	2.9	.39	.81	.06	.01	.00	.00	.00	.00	.00	.00
13	.02	.97	.16	3.1	.10	.01	.00	.00	.00	.00	.00	.00
14	.02	.27	.12	1.7	2.3	.00	.00	.00	.00	.00	.00	.00
15	.02	.18	.43	3.3	2.8	.00	.00	.00	.00	.00	.00	.00
16	.02	.14	.30	.88	.98	.00	.00	.00	.00	.00	.00	.00
17	.02	.12	.08	.48	.33	.00	.00	.00	.00	.00	.00	.00
18	.03	.10	.03	.33	.27	.00	.00	.00	.00	.00	.00	.00
19	1.5	.10	.06	.27	2.5	.00	.00	.00	.00	.00	.00	.00
20	2.0	.08	.03	.24	.40	.00	.00	.00	.00	.00	.00	.00
21	.24	.08	.03	.08	.24	.00	.00	.00	.00	.00	.00	.00
22	.10	.12	.03	.02	.12	.00	.00	.00	.00	.00	.00	.00
23	.08	.12	.03	.02	.08	.00	.00	.00	.00	.00	.00	.00
24	.11	.14	.03	.03	.08	.00	.00	.00	.00	.00	.00	.00
25	.29	.06	12	.18	.08	.00	18	.00	.00	.00	.00	.00
26	.25	.02	6.0	.18	.06	.00	1.7	.00	.00	.00	.00	.00
27	.84	.04	.73	.19	.04	.00	.30	.00	.00	.00	.00	.00
28	.16	.08	.33	.24	.12	.00	.16	.00	.00	.00	.00	.00
29	.08	.04	.16	.38	.16	.00	.10	.00	.00	.00	.00	.00
30	.18	.02	.18	.18	---	.00	.01	.00	.00	.00	.00	.00
31	.18	---	.18	.32	---	.00	---	.00	---	.00	.00	---
TOTAL	9.19	9.84	22.26	17.66	14.67	1.89	20.27	.21	.00	.00	.00	.00
MEAN	.30	.33	.72	.57	.51	.061	.68	.007	.00	.00	.00	.00
MAX	2.0	2.9	12	3.3	2.8	.76	18	.06	.00	.00	.00	.00
MIN	.02	.02	.01	.02	.04	.00	.00	.00	.00	.00	.00	.00
AC-FT	18	20	44	35	29	3.7	40	.4	.00	.00	.00	.00

CAL YR 1983	TOTAL	128.63	MEAN	.35	MAX	12	MIN	.00	AC-FT	255
WTR YR 1984	TOTAL	95.99	MEAN	.26	MAX	18	MIN	.00	AC-FT	190

16508000 HANAWI STREAM NEAR NAHIKU

LOCATION.--Lat 20°48'37", long 156°07'00", Hydrologic Unit 20020000, on left bank 200 ft upstream from Koolau ditch intake and trail, 1.9 mi southwest of Nahiku, and 4.5 mi southeast of Keanae.

DRAINAGE AREA.--3.49 mi^2.

PERIOD OF RECORD.--January 1914 to January 1916, November 1921 to current year. Monthly discharge only April to June 1915, published in WSP 1319.

REVISED RECORDS.--WSP 1045: 1922-43(M). WSP 1569: Drainage area. WSP 1719: 1915(M), 1922, 1924-25, 1927, 1930-35, 1937, 1939-40, 1942-43.

GAGE.--Water-stage recorder. Datum of gage is 1,318 ft above mean sea level (by vertical angles). Prior to Nov. 1, 1921, at site 50 ft downstream at datum 0.12 ft lower.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--62 years (water years 1923-84), 22.9 ft^3/s (16,590 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 5,570 ft^3/s Jan. 18, 1916, gage height, 11.6 ft, present site and datum, from rating curve extended above 814 ft^3/s by test model of station site; minimum, 1.2 ft^3/s Oct. 17, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft^3/s Feb. 8, gage height, 5.85 ft, no peak above base of 1,700 ft^3/s; minimum, 1.5 ft^3/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	7.8	3.8	2.5	7.2	4.0	17	8.1	5.5	3.1	4.0	2.5
2	18	7.0	3.7	2.5	22	3.9	7.6	12	4.7	3.1	3.0	2.4
3	19	6.7	3.6	2.4	16	3.8	4.4	8.3	4.4	3.4	3.2	2.3
4	80	7.3	3.5	2.7	6.8	4.7	6.5	7.1	4.2	4.6	6.1	2.2
5	56	14	3.4	65	4.2	4.7	3.6	6.7	4.2	5.1	4.9	2.2
6	101	7.4	3.9	11	3.7	3.8	50	6.3	4.0	3.3	3.5	2.1
7	53	6.5	3.6	3.3	4.3	3.8	11	6.2	3.8	8.7	3.0	2.1
8	98	6.2	3.3	2.9	143	3.7	19	6.0	4.0	62	2.8	2.0
9	18	5.9	3.2	2.6	98	3.5	95	5.5	4.0	9.5	2.7	2.0
10	37	5.7	3.0	2.5	6.7	3.5	117	5.2	5.0	4.9	3.1	2.1
11	13	27	3.0	2.9	4.6	3.4	43	11	4.6	4.0	3.9	2.0
12	11	82	2.9	21	4.1	3.3	8.8	6.5	3.8	3.8	3.0	2.0
13	9.6	15	3.0	81	3.8	3.3	6.2	5.1	4.7	4.2	4.4	1.9
14	9.7	11	3.6	10	6.0	3.2	156	5.0	4.1	3.6	3.0	1.9
15	11	9.5	3.7	6.7	52	3.2	30	9.5	6.8	3.3	2.6	1.8
16	90	7.3	2.9	7.6	14	3.1	17	10	16	3.2	2.5	1.8
17	22	6.4	2.8	4.1	6.0	3.0	35	12	8.6	3.0	2.5	1.8
18	11	5.8	2.7	3.5	5.8	3.0	27	9.4	5.2	2.9	2.5	1.7
19	25	6.1	2.7	3.2	43	2.9	23	6.1	4.4	2.8	2.4	1.7
20	11	6.3	2.6	3.0	73	2.9	15	7.1	4.2	3.1	2.4	1.7
21	10	5.9	2.6	2.8	9.0	2.9	13	9.3	7.4	3.3	2.3	1.7
22	9.6	4.9	2.5	2.8	5.9	2.8	18	12	5.1	2.7	45	1.7
23	8.6	7.1	2.5	68	8.3	2.8	21	131	4.5	2.6	15	1.7
24	78	11	2.5	24	6.2	2.7	60	27	4.6	2.7	4.8	1.7
25	62	5.6	71	6.8	5.7	2.6	11	9.7	4.0	2.5	3.1	1.7
26	130	4.8	30	13	5.0	2.7	9.0	6.8	3.7	2.5	2.9	1.6
27	130	4.5	3.9	20	4.6	3.0	8.1	5.8	3.7	2.8	4.5	1.6
28	30	4.2	2.8	48	4.2	49	7.8	5.2	3.5	3.3	3.1	1.8
29	13	4.0	2.6	50	4.1	28	14	8.9	3.3	2.6	2.6	1.7
30	11	3.9	2.5	18	---	11	9.5	33	3.2	2.5	2.5	1.6
31	8.8	---	2.5	83	---	4.8	---	6.7	---	4.4	2.5	---
TOTAL	1205.3	306.8	190.3	576.8	577.2	183.0	863.5	408.5	149.2	173.5	153.8	57.0
MEAN	38.9	10.2	6.14	18.6	19.9	5.90	28.8	13.2	4.97	5.60	4.96	1.90
MAX	130	82	71	83	143	49	156	131	16	62	45	2.5
MIN	8.6	3.9	2.5	2.4	3.7	2.6	3.6	5.0	3.2	2.5	2.3	1.6
AC-FT	2390	609	377	1140	1140	363	1710	810	296	344	305	113

CAL YR 1983 TOTAL 4836.2 MEAN 13.2 MAX 154 MIN 1.5 AC-FT 9590
WTR YR 1984 TOTAL 4844.9 MEAN 13.2 MAX 156 MIN 1.6 AC-FT 9610

16512000 KOOLAU DITCH AT NAHIKU WEIR, NEAR NAHIKU

LOCATION.--Lat 20°48'56", long 156°07'15", Hydrologic Unit 20020000, on right bank between Kapaula and Waiohue Gulches, 1.8 mi southwest of Nahiku, and 3.8 mi southeast of Keanae.

PERIOD OF RECORD.--February 1919 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,289.14 ft above mean sea level. Prior to Apr. 28, 1922, nonrecording gage at same site and datum.

REMARKS.--Records good. Ditch diverts water from nearly all streams from the Makapipi west to the Alo for power, domestic use, and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--65 years, 34.1 ft^3/s (24,710 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 104 ft^3/s Mar. 17, 1980; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 92 ft^3/s Nov. 12, Jan. 13; minimum daily, 6.6 ft^3/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	40	19	11	39	20	41	34	28	14	18	13
2	69	36	19	11	46	19	26	45	25	14	14	12
3	71	34	18	10	58	18	17	35	23	15	16	12
4	90	36	17	12	36	20	22	31	22	18	28	11
5	90	56	17	45	28	20	14	28	21	20	23	10
6	91	36	19	37	24	17	58	27	20	15	18	10
7	88	32	18	17	28	16	38	27	19	24	15	10
8	90	30	16	14	60	15	46	26	20	64	14	9.7
9	73	28	15	13	73	15	71	23	19	44	12	9.3
10	80	27	15	12	38	15	84	23	23	27	14	10
11	58	42	15	13	31	14	69	34	21	22	16	9.7
12	52	92	14	29	28	14	40	28	18	20	14	9.3
13	47	64	14	92	25	13	33	23	20	21	19	8.5
14	44	53	17	51	31	13	84	22	18	18	14	8.9
15	44	48	17	33	72	12	66	33	26	16	12	8.1
16	76	37	14	35	57	12	57	36	51	16	12	8.1
17	68	33	13	23	36	12	71	42	35	15	11	8.5
18	49	29	13	20	32	12	71	37	25	14	10	8.1
19	70	31	12	18	72	11	69	27	21	14	10	8.1
20	51	31	12	16	77	11	62	28	20	15	10	8.1
21	46	31	12	15	43	11	54	33	28	17	11	7.8
22	44	27	12	15	33	11	49	40	23	13	32	7.8
23	40	32	11	40	38	11	60	69	21	13	45	7.8
24	68	45	11	48	33	10	71	70	20	13	24	7.8
25	78	29	37	31	30	9.9	47	45	19	12	16	7.4
26	62	26	51	50	27	10	40	37	18	12	15	7.4
27	91	23	17	64	24	11	35	32	18	12	22	7.4
28	83	22	14	75	22	47	34	29	16	15	16	8.1
29	59	21	12	70	21	55	45	35	16	12	14	7.0
30	51	20	12	56	---	34	39	62	15	11	13	6.6
31	43	---	11	77	---	19	---	32	---	17	12	---
TOTAL	2042	1091	514	1053	1162	527.9	1513	1093	669	573	520	267.5
MEAN	65.9	36.4	16.6	34.0	40.1	17.0	50.4	35.3	22.3	18.5	16.8	8.92
MAX	91	92	51	92	77	55	84	70	51	64	45	13
MIN	40	20	11	10	21	9.9	14	22	15	11	10	6.6
AC-FT	4050	2160	1020	2090	2300	1050	3000	2170	1330	1140	1030	531

CAL YR 1983 TOTAL 12183.7 MEAN 33.4 MAX 92 MIN 6.3 AC-FT 24170
WTR YR 1984 TOTAL 11025.4 MEAN 30.1 MAX 92 MIN 6.6 AC-FT 21870

16518000 WEST WAILUAIKI STREAM NEAR KEANAE

LOCATION.--Lat 20°49'16", long 156°08'37", Hydrologic Unit 20020000, on left bank 500 ft upstream from Koolau ditch crossing and trail bridge and 2.8 mi south of Keanae Post Office.

DRAINAGE AREA.--3.66 mi^2.

PERIOD OF RECORD.--January 1914 to December 1915, May 1916 to October 1917, November 1921 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1569. Drainage area. WSP 2137: 1915-16(M), 1923-25(M), 1929-31(M), 1934-35(M), 1937-39(M), 1941-43(M), 1946-47(M), 1948(P), 1949(M), 1952-53(M), 1955-56(M), 1959-60(M), 1960(P), 1961(M), 1963(M).

GAGE.--Water-stage recorder. Datum of gage is 1,343.1 ft above mean sea level (by vertical angles). Prior to Oct. 3, 1974, at present site at datum 0.50 ft higher.

REMARKS.--Records good. No diversion above station. Water is diverted by Koolau ditch, 500 ft below station, for domestic supply and irrigation of sugarcane in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--64 years (water years 1915, 1917, 1923-84), 35.0 ft^3/s (25,360 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft^3/s Jan. 14, 1923, gage height, 13.5 ft, from floodmarks, from rating curve extended above 650 ft^3/s; minimum, 0.5 ft^3/s July 26, 1922.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,870 ft^3/s Oct. 26, gage height 7.64 ft, no peak above base of 1,900 ft^3/s; minimum, 1.1 ft^3/s Sept. 27, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	11	3.9	2.4	16	5.2	47	8.9	9.7	3.3	4.8	2.9
2	23	9.5	3.6	2.2	31	5.1	18	12	8.1	3.1	2.6	2.5
3	29	8.9	3.5	2.1	35	4.8	11	7.9	7.5	5.1	2.7	2.4
4	105	10	3.3	2.6	16	6.3	20	6.8	6.8	6.2	5.7	2.3
5	69	21	3.3	114	9.6	6.7	8.4	6.2	6.9	6.0	4.1	2.2
6	112	8.8	4.5	24	9.7	4.4	76	6.0	5.8	3.2	2.8	2.1
7	71	7.6	3.9	6.2	10	4.5	24	5.9	5.3	14	2.5	2.1
8	136	7.1	3.6	4.3	201	4.7	35	5.4	6.2	87	2.3	2.1
9	33	6.6	3.7	3.4	112	3.7	116	4.7	5.2	16	2.2	2.2
10	59	6.0	3.0	3.0	18	3.5	104	4.5	7.1	7.9	3.0	2.6
11	21	40	2.8	3.6	12	3.3	50	17	6.4	5.4	4.7	2.1
12	15	117	2.6	44	9.5	3.2	16	7.8	4.7	4.4	2.6	2.0
13	12	25	2.9	116	8.1	3.0	12	5.1	7.4	6.0	4.8	1.9
14	12	17	5.0	18	14	3.1	229	5.6	5.0	3.9	2.6	1.8
15	14	13	6.6	15	63	2.9	53	12	15	3.4	2.3	1.7
16	117	9.2	3.1	18	22	2.8	26	17	23	3.2	2.1	1.7
17	36	7.9	2.6	9.1	11	2.7	48	19	9.5	3.0	2.1	1.6
18	15	7.1	2.4	5.9	10	2.7	41	12	6.1	2.8	2.0	1.6
19	54	6.9	2.3	4.7	67	2.6	24	8.5	5.2	2.6	2.2	1.6
20	17	6.2	2.2	4.1	100	2.5	19	12	4.9	3.3	2.1	1.6
21	13	5.9	2.2	3.7	20	2.4	16	17	8.7	3.1	2.1	1.6
22	12	5.2	2.1	3.4	12	2.3	19	17	5.4	2.7	97	1.5
23	11	11	2.0	30	13	2.6	31	160	4.9	2.4	24	1.5
24	121	17	1.9	19	10	2.4	43	52	5.0	2.9	6.6	1.7
25	96	6.4	73	8.8	9.2	2.2	19	17	4.1	2.5	3.9	1.7
26	183	6.1	44	16	7.9	2.5	14	11	3.7	2.3	3.7	1.6
27	193	5.2	8.6	30	7.0	11	11	9.2	4.5	2.9	7.1	1.4
28	47	4.8	4.4	69	6.2	98	9.8	8.3	3.6	4.4	3.7	1.5
29	21	4.4	3.3	62	5.6	56	17	22	3.4	2.4	3.1	1.3
30	16	4.2	2.9	29	---	28	10	54	3.1	2.2	2.8	1.3
31	13	---	2.6	117	---	10	---	13	---	6.7	2.7	---
TOTAL	1708	416.0	215.8	790.5	865.8	295.1	1167.2	564.8	202.2	224.3	216.9	56.1
MEAN	55.1	13.9	6.96	25.5	29.9	9.52	38.9	18.2	6.74	7.24	7.00	1.87
MAX	193	117	73	117	201	98	229	160	23	87	97	2.9
MIN	11	4.2	1.9	2.1	5.6	2.2	8.4	4.5	3.1	2.2	2.0	1.3
AC-FT	3390	825	428	1570	1720	585	2320	1120	401	445	430	111

CAL YR 1983 TOTAL 7056.7 MEAN 19.3 MAX 193 MIN 1.3 AC-FT 14000
WTR YR 1984 TOTAL 6722.7 MEAN 18.4 MAX 229 MIN 1.3 AC-FT 13330

16523000 KOOLAU DITCH NEAR KEANAE

LOCATION.--Lat 20°49'53", long 156°10'30", Hydrologic Unit 20020000, on right bank on west side of Keanae Valley, 2.7 mi southwest of Keanae School, and 5.1 mi southeast of Kailua.

PERIOD OF RECORD.--January 1910 to December 1912, November 1917 to February 1918, April 1918 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,237.7 ft above mean sea level (by plane-table traverse). Jan. 1, 1910, to Dec. 31, 1912, nonrecording gage at same site and datum.

REMARKS.--Records good. Ditch diverts at altitude 1,260 ft from nearly all streams from the Makapipi west to the Alo for power, domestic use, and irrigation in central Maui. Ditch is regulated for short periods on several days. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--68 years (water years 1911-12, 1918-84), 101 ft³/s (73,170 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 266 ft³/s Apr. 19, 1935; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 210 ft³/s Nov. 12, Apr. 14; minimum daily, 18 ft³/s Sept. 23, 26, 27, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	102	49	30	128	54	167	83	78	42	56	36
2	178	92	47	30	123	52	110	129	68	41	38	31
3	184	86	46	28	192	50	67	83	65	51	42	28
4	201	96	44	35	123	54	110	72	61	61	84	28
5	193	157	43	111	82	57	53	68	62	66	61	27
6	208	91	51	126	76	47	175	64	56	43	44	27
7	202	78	48	52	93	47	141	64	53	68	38	26
8	205	74	45	42	181	46	170	62	58	189	35	25
9	186	70	44	37	205	43	208	56	54	126	32	25
10	194	67	40	35	134	41	208	54	70	69	40	29
11	171	100	38	40	93	39	194	96	61	57	54	24
12	144	210	37	103	80	38	123	72	51	52	36	23
13	123	170	38	209	70	36	95	55	62	58	54	22
14	117	137	51	145	112	36	210	58	53	47	36	23
15	123	132	64	95	183	35	192	108	110	44	32	21
16	187	95	40	113	166	34	175	123	178	43	30	21
17	179	82	37	70	97	33	201	148	102	41	29	21
18	132	74	35	55	91	33	200	108	66	38	28	20
19	180	75	34	49	201	32	181	72	58	37	29	20
20	146	73	33	46	205	30	172	86	56	42	28	19
21	120	72	32	43	143	29	156	126	92	44	27	19
22	116	63	31	41	98	29	137	131	63	36	95	19
23	101	97	30	95	119	30	171	189	56	34	141	18
24	171	127	30	128	94	29	185	200	57	37	66	20
25	196	71	91	84	81	27	155	137	51	34	45	19
26	175	63	177	150	71	29	117	100	48	32	42	18
27	204	59	59	192	65	53	97	82	52	36	72	18
28	190	55	42	205	61	175	89	74	46	49	43	22
29	166	53	40	196	57	198	141	133	44	33	36	19
30	141	51	34	176	---	147	100	187	42	31	34	18
31	115	---	32	203	---	64	---	97	---	60	33	---
TOTAL	5133	2772	1462	2964	3424	1647	4500	3117	1973	1641	1460	686
MEAN	166	92.4	47.2	95.6	118	53.1	150	101	65.8	52.9	47.1	22.9
MAX	208	210	177	209	205	198	210	200	178	189	141	36
MIN	101	51	30	28	57	27	53	54	42	31	27	18
AC-FT	10180	5500	2900	5880	6790	3270	8930	6180	3910	3250	2900	1360

CAL YR 1983 TOTAL 34277 MEAN 93.9 MAX 210 MIN 17 AC-FT 67990
WTR YR 1984 TOTAL 30779 MEAN 84.1 MAX 210 MIN 18 AC-FT 61050

16531000 KULA DIVERSION FROM HAIPUAENA STREAM NEAR OLINDA

LOCATION.--Lat 20°48'24", long 156°13'27", Hydrologic Unit 20020000, on left bank of Haipuaena Stream, 3.4 mi east of Olinda, and 6.2 mi south of Kailua.

PERIOD OF RECORD.--July 1945 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir since Apr. 2, 1975. Altitude of gage is 4,320 ft, from topographic map.

REMARKS.--Records good except those above 6.6 ft^3/s, which are poor. Water is diverted from Haipuaena Stream at station for domestic use and irrigation of truck crops in the Olinda and Kula areas. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--39 years, 0.760 ft^3/s (551 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 10 ft^3/s Nov. 6, 1976, July 2, 1982; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 8.5 ft^3/s Apr. 9; minimum daily, 0.01 ft^3/s Dec. 20-24, Mar. 17, 21-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	.32	.06	.05	.91	.10	3.0	.22	.40	.02	.44	.36
2	.84	.25	.04	.03	1.5	.28	1.5	.16	.28	.02	.19	.40
3	.84	.16	.06	.02	2.6	.36	.84	.14	.19	.07	.12	.16
4	4.0	.22	.10	.02	1.0	.22	.97	.16	.14	.32	.08	.10
5	4.6	1.2	.06	4.2	.48	.14	.36	.22	.12	.36	.07	.30
6	2.1	.48	.04	1.8	.36	.10	4.4	.16	.10	.16	.07	.36
7	4.0	.25	.03	.44	1.6	.08	1.4	.12	.09	.12	.04	.14
8	5.7	.16	.03	.28	3.9	.07	2.0	.12	.08	3.3	.03	.09
9	2.2	.12	.04	.19	1.6	.05	8.5	.10	.07	2.7	.02	.07
10	4.6	.10	.03	.12	.97	.04	5.1	.07	.10	.78	.03	.12
11	1.0	1.6	.02	.10	.48	.03	1.8	.07	.19	.32	.07	.10
12	.72	7.5	.02	1.3	.36	.03	.78	.10	.14	.19	.24	.07
13	.66	1.6	.02	6.4	.32	.02	.84	.12	.19	.36	.66	.04
14	.54	.54	.03	1.2	1.2	.02	6.6	.10	.16	.22	.19	1.5
15	.48	.44	.03	1.1	1.2	.02	2.5	.40	.40	.12	.10	.60
16	5.4	.32	.03	.48	1.2	.02	1.1	.91	1.5	.09	.05	.19
17	2.7	.19	.03	.28	.54	.01	1.9	1.2	.54	.07	.03	1.8
18	1.0	.14	.02	.19	.36	.02	1.2	.97	.25	.06	.02	.97
19	5.7	.12	.02	.14	2.0	.02	.91	.44	.16	.05	.02	.44
20	1.2	.10	.01	.12	2.0	.02	.78	1.0	.12	.05	.02	.22
21	.66	.09	.01	.09	1.2	.01	.97	.78	.10	.05	.02	.14
22	.40	.07	.01	.07	.54	.01	.90	.84	.08	.10	1.5	.10
23	.32	.28	.01	2.6	.40	.01	1.8	3.6	.06	.07	2.0	.07
24	3.0	.60	.01	1.2	.28	.01	1.0	3.7	.06	.08	.54	.05
25	2.7	.91	3.6	.44	.25	.01	2.8	.97	.05	.10	.62	.04
26	3.4	.60	4.6	.72	.22	.01	1.7	.60	.04	.06	.72	.03
27	6.7	.22	.91	1.7	.19	1.4	.84	.66	.03	.11	1.9	.03
28	3.2	.14	.28	4.3	.14	5.0	.40	.48	.03	.66	.60	.02
29	1.2	.12	.16	3.6	.12	3.8	.48	2.1	.02	.22	.28	.02
30	.66	.08	.12	1.9	---	2.1	.36	4.3	.02	.10	.14	.02
31	.40	---	.08	4.6	---	.78	---	.78	---	1.0	.16	---
TOTAL	72.92	18.92	10.51	39.68	27.92	14.79	57.73	25.59	5.71	11.93	10.97	8.55
MEAN	2.35	.63	.34	1.28	.96	.48	1.92	.83	.19	.38	.35	.28
MAX	6.7	7.5	4.6	6.4	3.9	5.0	8.5	4.3	1.5	3.3	2.0	1.8
MIN	.32	.07	.01	.02	.12	.01	.36	.07	.02	.02	.02	.02
AC-FT	145	38	21	79	55	29	115	51	11	24	22	17

CAL YR 1983 TOTAL 362.84 MEAN .99 MAX 8.8 MIN .01 AC-FT 720
WTR YR 1984 TOTAL 305.22 MEAN .83 MAX 8.5 MIN .01 AC-FT 605

16538000 SPRECKELS DITCH AT HAIPUAENA WEIR, NEAR HUELO

LOCATION.--Lat 20°51'15", long 156°11'25", Hydrologic Unit 20020000, on right bank near Spreckels ditch trail between Haipuaena and Puohokamoa Streams, 2.7 mi west of Keanae, and 4.5 mi southeast of Huelo.

PERIOD OF RECORD.--April 1922 to current year. Published as "at Haipuaena, near Huelo" 1930-35.

REVISED RECORDS.--WSP 770: 1932-33.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,470.96 ft above mean sea level (East Maui Irrigation Co. bench mark). Apr. 29, 1922, to Feb. 19, 1930, at same site at different datum. Feb. 20, 1930, to Oct. 25, 1935, at site 100 ft upstream at different datum.

REMARKS.--Records good. Spreckels ditch diverts from all streams between the Nuaailua and the Kailua above Koolau ditch east of the Puohokamoa, and below Koolau ditch west of the Puohokamoa. About 6 ft³/s was diverted above station to East Maui Irrigation Co. powerplant at Kolea Gulch prior to June 30, 1961, when the plant was abandoned. Water used for domestic supply and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since termination of powerplant diversion).--23 years (water years 1962-84), 29.3 ft³/s (21,230 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 150 ft³/s Feb. 10, 1955, Feb. 18, 1956; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 125 ft³/s Jan. 13; minimum daily, 2.5 ft³/s Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	20	8.1	5.8	29	10	67	17	14	6.6	14	7.7
2	49	18	7.8	5.6	47	11	25	27	11	7.4	6.3	7.6
3	72	17	7.5	5.3	64	9.9	18	15	11	9.8	5.2	5.4
4	113	28	7.8	6.0	27	8.7	37	13	9.9	20	20	4.9
5	98	72	7.2	59	18	8.3	13	12	12	19	12	16
6	108	22	11	42	16	7.3	91	11	9.8	7.7	7.1	9.5
7	92	17	9.2	13	36	7.1	41	11	8.6	21	5.7	5.0
8	99	15	14	11	97	7.0	52	9.7	11	82	5.1	4.6
9	55	14	11	8.4	81	6.3	107	8.6	10	32	4.7	4.8
10	82	13	7.2	7.4	26	6.0	100	8.3	19	15	6.5	9.7
11	38	39	7.5	13	19	5.7	79	12	15	11	13	4.7
12	28	115	6.6	62	17	5.4	31	10	9.4	9.5	6.0	3.9
13	24	50	8.8	125	17	5.1	24	7.5	15	12	9.8	3.6
14	28	39	22	45	46	5.4	123	8.1	10	8.4	5.5	3.5
15	33	35	26	24	95	5.0	69	28	38	7.2	4.7	4.5
16	96	19	9.2	16	45	4.8	47	28	64	6.8	4.2	4.3
17	60	16	7.5	13	21	5.1	80	38	24	6.2	4.0	3.4
18	33	14	6.9	11	20	5.4	70	21	14	5.9	3.9	3.5
19	92	13	6.3	9.6	94	4.5	49	12	12	5.6	4.1	3.2
20	36	12	6.0	8.7	91	4.2	46	19	11	6.1	4.1	2.9
21	25	11	5.8	8.0	30	4.1	37	38	25	5.6	3.9	2.8
22	24	10	5.6	7.4	21	4.1	42	29	13	5.3	51	2.6
23	20	27	5.3	43	27	4.4	56	83	9.9	5.0	48	2.5
24	74	42	5.0	35	20	4.1	44	73	12	6.5	16	2.9
25	81	22	50	23	18	3.8	49	27	9.0	5.4	9.1	2.8
26	62	15	58	45	16	4.6	30	18	7.9	4.8	8.9	2.6
27	103	11	14	71	13	19	22	15	9.7	6.3	27	2.6
28	78	9.5	8.4	109	12	95	19	14	7.5	11	9.6	3.1
29	37	8.8	7.2	94	11	77	34	29	6.7	5.2	7.2	2.7
30	28	8.4	6.6	53	---	41	20	65	6.2	4.6	6.3	2.6
31	22	---	6.3	93	---	17	---	17	---	21	6.2	---
TOTAL	1850	752.7	369.8	1072.2	1074	406.3	1522	724.2	435.6	379.9	339.1	139.9
MEAN	59.7	25.1	11.9	34.6	37.0	13.1	50.7	23.4	14.5	12.3	10.9	4.66
MAX	113	115	58	125	97	95	123	83	64	82	51	16
MIN	20	8.4	5.0	5.3	11	3.8	13	7.5	6.2	4.6	3.9	2.5
AC-FT	3670	1490	733	2130	2130	806	3020	1440	864	754	673	277

CAL YR 1983	TOTAL	10517.8	MEAN	28.8	MAX	115	MIN	2.2	AC-FT 20860
WTR YR 1984	TOTAL	9065.7	MEAN	24.8	MAX	125	MIN	2.5	AC-FT 17980

16541000 KOOLAU DITCH AT HAIPUAENA, NEAR HUELO

LOCATION.--Lat 20°51'17", long 156°11'19", Hydrologic Unit 20020000, on right bank at Haipuaena Stream, 1,000 ft upstream from intake at Puohokamoa Stream, 3.3 mi southeast of Kailua, and 4.5 mi southeast of Huelo.

PERIOD OF RECORD.--April 1932 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 1,240 ft, from topographic map. Prior to Mar. 21, 1933, at datum 1.94 ft lower, and Mar. 21, 1933, to Mar. 20, 1935, at datum 0.25 ft lower than present datum.

REMARKS.--Records good. Ditch is extension of Wailoa ditch east of Alo Stream; it receives water from Makapipi ditch at Hanawi Stream and diverts from nearly all streams from there west to the Alo. Water is used for power, domestic supply, and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--52 years, 115 ft³/s (83,320 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 300 ft³/s July 1, 17, 1963; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 260 ft³/s Nov. 12; minimum daily, 18 ft³/s Sept. 22, 23, 26, 27, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	106	50	29	132	56	173	88	82	41	57	35
2	179	96	48	28	129	54	115	131	72	42	38	30
3	191	92	46	27	198	52	70	88	67	52	41	28
4	239	99	44	34	128	56	116	77	64	63	85	27
5	225	176	43	114	88	60	56	71	65	69	63	29
6	254	96	53	138	80	49	192	67	58	42	44	27
7	229	84	49	54	103	48	147	68	54	67	38	25
8	236	79	45	43	190	47	171	65	60	218	34	25
9	190	75	44	38	235	42	245	59	56	132	32	25
10	219	70	39	35	140	41	239	56	73	74	40	28
11	172	111	38	40	99	39	213	96	65	60	54	24
12	145	260	37	118	86	36	126	76	53	54	36	23
13	126	177	38	227	75	35	98	58	65	60	56	22
14	119	142	52	154	124	35	255	60	55	48	36	22
15	124	138	67	98	184	33	206	109	113	44	32	21
16	205	100	40	117	175	32	177	124	184	43	30	21
17	191	88	36	75	103	32	214	146	107	41	28	20
18	134	79	34	58	97	31	204	112	70	38	27	20
19	208	80	33	50	216	30	182	76	61	37	28	19
20	150	78	32	46	219	29	172	90	57	42	27	19
21	124	77	31	43	149	28	156	127	96	44	26	19
22	119	66	30	41	103	27	140	131	66	36	113	18
23	105	100	29	99	121	28	179	212	59	34	152	18
24	196	137	29	136	99	27	185	217	59	36	70	19
25	222	76	94	86	87	25	159	141	53	33	46	19
26	190	67	184	151	76	26	120	104	49	32	41	18
27	236	62	64	199	69	50	102	87	53	35	76	18
28	202	58	41	246	64	200	93	78	46	51	43	21
29	169	55	35	221	60	212	142	131	44	32	36	19
30	144	52	33	179	---	151	105	200	42	30	33	18
31	119	---	31	216	---	69	---	101	---	60	32	---
TOTAL	5554	2976	1469	3140	3629	1680	4752	3246	2048	1690	1494	677
MEAN	179	99.2	47.4	101	125	54.2	158	105	68.3	54.5	48.2	22.6
MAX	254	260	184	246	235	212	255	217	184	218	152	35
MIN	105	52	29	27	60	25	56	56	42	30	26	18
AC-FT	11020	5900	2910	6230	7200	3330	9430	6440	4060	3350	2960	1340

CAL YR 1983	TOTAL	36205	MEAN	99.2	MAX	262	MIN	17	AC-FT	71810
WTR YR 1984	TOTAL	32355	MEAN	88.4	MAX	260	MIN	18	AC-FT	64180

16541500 MANUEL LUIS DITCH AT PUOHOKAMOA GULCH, NEAR HUELO

LOCATION.--Lat 20°51'48", long 156°10'49", Hydrologic Unit 20020000, on right bank at lower portal of tunnel between Haipuaena and Puohokamoa Streams, 2.2 mi west of Keanae, and 4.4 mi southeast of Huelo.

PERIOD OF RECORD.--December 1917 to November 1924, January 1925 to current year.

REVISED RECORDS.--WSP 1719: 1918-30.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 920 ft, from topographic map.

REMARKS.--Records good. Ditch is extension of Center ditch and picks up water from streams between the Kolea and the Waikamoi for irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--65 years (water years, 1919-24, 1926-84), 8.20 ft³/s (5,940 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 142 ft³/s Jan. 3, 1927; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 87 ft³/s Nov. 12; minimum daily, 0.05 ft³/s Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	1.6	.50	.19	1.6	.64	.28	.75	.95	.18	.25	.38
2	5.7	1.3	.45	.18	19	.61	.30	.89	.83	.18	.25	.25
3	7.0	1.2	.44	.18	5.3	.53	.25	.68	.74	.28	.20	.20
4	59	1.5	.37	.22	2.7	.47	.21	.59	.67	.29	.33	.20
5	22	7.8	.37	27	2.2	.45	.18	.53	.60	.21	.33	.18
6	43	1.4	.37	2.3	1.8	.40	26	.48	.53	.16	.21	.18
7	22	1.2	.43	.48	2.7	.43	.90	.45	.48	1.2	.18	.18
8	37	1.1	.38	.34	43	.39	.55	.50	.49	45	.16	.18
9	5.2	1.0	.42	.30	20	.32	8.6	.40	.50	2.3	.13	.19
10	19	.91	.30	.27	2.9	.30	40	.36	.55	.74	.22	.19
11	2.8	25	.30	.26	2.3	.26	6.3	.56	.43	.56	.30	.18
12	2.3	87	.26	10	2.2	.24	1.1	.46	.38	.46	.16	.18
13	1.9	9.7	.35	80	2.3	.24	.80	.33	.37	.45	.32	.18
14	1.6	4.7	.67	7.2	3.1	.24	81	.32	.32	.36	.19	.18
15	1.4	3.5	1.1	3.3	37	.19	13	.72	.39	.30	.14	.15
16	48	2.3	.41	2.2	4.7	.18	3.4	.60	2.6	.32	.13	.09
17	8.7	2.0	.31	1.5	2.7	.19	3.2	1.2	.83	.26	.11	.09
18	1.7	1.6	.26	1.3	2.3	.18	2.2	.86	.44	.24	.10	.10
19	16	1.4	.24	1.1	21	.17	3.1	.46	.35	.23	.09	.12
20	2.3	1.2	.24	.95	21	.14	4.8	.48	.30	.51	.09	.15
21	1.9	1.1	.18	.83	1.7	.14	2.8	1.1	.55	.36	.09	.18
22	1.7	.95	.18	.71	1.4	.14	2.4	.92	.43	.24	32	.17
23	1.5	1.1	.18	12	1.4	.13	5.4	49	.31	.19	4.2	.18
24	39	3.3	.18	1.6	1.3	.13	1.8	17	.30	.27	.89	.18
25	30	.99	11	.91	1.1	.13	1.5	4.3	.25	.19	.36	.11
26	29	.84	2.3	2.0	.99	.15	1.3	2.5	.24	.18	.29	.08
27	47	.73	.48	1.9	.88	.25	1.1	1.9	.23	.17	.49	.11
28	5.1	.65	.32	17	.79	24	.98	1.5	.21	.27	.28	.11
29	2.9	.59	.27	11	.71	2.9	.99	1.5	.18	.20	.21	.05
30	2.4	.53	.24	1.9	---	.79	.85	2.7	.18	.17	.18	.08
31	1.9	---	.24	28	---	.38	---	1.2	---	.19	.20	---
TOTAL	476.7	168.19	23.74	217.12	210.07	35.71	215.29	95.24	15.63	56.66	43.08	4.80
MEAN	15.4	5.61	.77	7.00	7.24	1.15	7.18	3.07	.52	1.83	1.39	.16
MAX	59	87	11	80	43	24	81	49	2.6	45	32	.38
MIN	1.4	.53	.18	.18	.71	.13	.18	.32	.18	.16	.09	.05
AC-FT	946	334	47	431	417	71	427	189	31	112	85	9.5

CAL YR 1983 TOTAL 1703.76 MEAN 4.67 MAX 87 MIN .06 AC-FT 3380
WTR YR 1984 TOTAL 1562.23 MEAN 4.27 MAX 87 MIN .05 AC-FT 3100

16587000 HONOPOU STREAM NEAR HUELO

LOCATION.--Lat 20°53'20", long 156°15'20", Hydrologic Unit 20020000, on left bank 75 ft upstream from Wailoa ditch intake, 2.2 mi southwest of Huelo, and 2.5 mi west of Kailua.

DRAINAGE AREA.--0.64 mi².

PERIOD OF RECORD.--December 1910 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1219: 1914(M), 1916-50(M). WSP 1249: 1948-50(P). WSP 1569: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,208 ft above mean sea level (by vertical angles). Prior to June 19, 1914, nonrecording gage at same site and datum.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--73 years (water years 1912-84), 4.67 ft³/s (3,380 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,710 ft³/s Nov. 18, 1930, gage height, 7.28 ft from rating curve extended above 110 ft³/s by test of model of station site; minimum, 0.02 ft³/s several days in 1933, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 376 ft³/s May 23, gage height, 3.26 ft, no other peak above base of 270 ft³/s; minimum, 0.17 ft³/s Sept. 16-27, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	3.7	1.7	.96	3.5	2.3	1.3	2.7	1.5	.70	.70	.51
2	7.1	3.3	1.6	.96	27	2.3	1.2	3.2	1.4	.70	.51	.43
3	8.0	3.2	1.6	.96	7.8	2.1	.84	2.4	1.4	.80	.43	.35
4	23	3.4	1.5	1.2	5.4	2.1	.96	2.1	1.3	.80	.80	.35
5	8.5	6.8	1.5	5.4	4.9	1.8	.74	2.0	1.4	.90	.60	.35
6	10	3.2	1.3	2.7	4.1	1.7	7.0	1.8	1.3	.60	.43	.35
7	13	2.7	1.3	1.5	4.2	1.7	2.0	1.7	1.1	.80	.35	.35
8	10	2.5	1.5	1.2	11	1.6	1.6	1.7	1.3	5.3	.35	.35
9	7.1	2.4	1.3	1.1	7.1	1.5	3.8	1.6	1.1	1.5	.35	.29
10	8.4	2.3	1.2	1.1	3.9	1.5	9.5	1.6	1.4	.90	.51	.29
11	5.8	12	1.3	1.8	3.5	1.3	5.0	1.6	1.1	.80	.60	.23
12	5.1	17	1.1	7.8	3.5	1.3	2.5	1.5	1.0	.70	.43	.23
13	4.7	6.1	2.1	27	4.9	1.2	2.3	1.3	1.1	.90	.60	.23
14	4.3	6.0	2.3	4.7	6.2	1.2	21	1.5	.90	.70	.35	.23
15	3.9	5.2	1.5	3.9	13	1.1	5.9	1.7	1.3	.60	.35	.23
16	16	3.9	1.2	3.0	5.1	.96	4.7	1.8	2.9	.60	.35	.23
17	6.4	3.7	.96	2.7	4.1	1.1	5.6	2.5	1.4	.51	.35	.17
18	5.6	3.2	.84	2.5	3.7	.96	5.6	1.7	.90	.51	.35	.17
19	12	3.0	.96	2.3	6.6	.84	4.7	1.3	.80	.51	.35	.17
20	5.8	2.8	.84	2.1	4.9	.84	4.7	1.5	.80	.60	.35	.17
21	4.9	2.7	.84	2.0	3.5	.84	3.9	2.0	2.3	.60	.35	.17
22	4.7	2.5	.84	1.8	3.3	.84	3.9	1.5	1.3	.51	4.7	.17
23	4.1	2.7	.84	5.1	3.5	.84	3.5	27	.90	.51	1.4	.17
24	5.1	4.6	.84	3.4	3.3	.74	3.6	5.5	.80	.70	.51	.17
25	6.7	2.6	5.2	2.4	3.0	.74	3.8	2.7	.80	.51	.35	.17
26	10	2.3	5.2	4.8	2.7	.84	3.0	2.1	.80	.43	.43	.17
27	18	2.1	1.6	3.7	2.7	.96	2.7	2.0	.90	.51	.60	.17
28	6.0	2.0	1.3	4.9	2.5	2.0	2.7	2.0	.80	.51	.43	.29
29	5.1	1.8	1.2	6.7	2.4	3.7	3.3	2.0	.80	.43	.43	.17
30	4.5	1.7	1.1	4.3	---	1.6	2.7	2.4	.70	.43	.43	.17
31	4.1	---	1.1	6.2	---	.96	---	1.7	---	.51	.43	---
TOTAL	244.8	121.5	47.66	120.18	161.3	43.46	124.04	88.1	35.50	25.08	19.17	7.50
MEAN	7.90	4.05	1.54	3.88	5.56	1.40	4.13	2.84	1.18	.81	.62	.25
MAX	23	17	5.2	27	27	3.7	21	27	2.9	5.3	4.7	.51
MIN	3.9	1.7	.84	.96	2.4	.74	.74	1.3	.70	.43	.35	.17
AC-FT	486	241	95	238	320	86	246	175	70	50	38	15

CAL YR 1983 TOTAL 1152.08 MEAN 3.16 MAX 26 MIN .30 AC-FT 2290
WTR YR 1984 TOTAL 1038.29 MEAN 2.84 MAX 27 MIN .17 AC-FT 2060

AVAILABLE

16588000 WAILOA DITCH AT HONOPOU, NEAR HUELO

LOCATION.--Lat 20°53'20", long 156°15'19", Hydrologic Unit 20020000, on right bank 100 ft downstream from intake at Honopou Stream, 0.5 mi west of Lupi, and 2.2 mi southwest of Huelo.

PERIOD OF RECORD.--November 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208 ft above mean sea level (by vertical angles).

REMARKS.--Records good. Wailoa ditch receives water from Koolau ditch at Alo Stream and from all streams from there west to Halehaku Gulch at altitude of about 1,200 ft. Water is used for domestic supply, power, and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--61 years (water years 1924-84), 170 ft³/s (123,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 328 ft³/s Nov. 24, 1981; no flow Jan. 24-27, 1923.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 311 ft³/s Nov. 12; minimum daily, 29 ft³/s Sept. 23, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	291	190	88	58	255	105	230	158	140	69	106	69
2	289	180	84	55	239	104	199	246	120	73	66	58
3	295	171	83	53	281	97	124	158	113	84	62	50
4	287	182	81	63	216	96	195	136	107	110	142	48
5	267	291	76	166	189	100	104	124	110	135	109	58
6	267	197	92	232	178	85	249	116	99	73	71	55
7	268	162	86	108	221	82	231	113	91	92	59	44
8	268	149	89	89	304	82	223	108	103	255	54	43
9	266	139	91	75	304	75	292	98	102	220	50	43
10	267	128	71	68	262	71	298	95	141	130	67	57
11	271	174	73	92	199	68	294	133	127	100	98	43
12	272	311	67	224	177	66	246	120	91	90	60	39
13	238	293	83	295	161	63	196	91	112	102	97	37
14	230	264	158	252	261	64	296	93	96	80	58	37
15	246	264	167	213	293	60	295	171	147	72	51	36
16	288	202	83	198	289	58	286	195	270	71	47	35
17	293	175	71	140	218	61	297	205	182	66	44	34
18	277	153	66	112	196	60	296	188	122	62	43	33
19	302	145	64	99	289	54	287	125	105	60	44	32
20	288	139	63	90	307	52	283	155	97	69	43	31
21	256	133	60	84	270	50	273	202	166	68	42	31
22	235	117	58	79	206	49	250	197	125	58	118	30
23	204	189	55	144	229	52	280	257	100	54	243	29
24	282	241	53	235	197	48	282	293	103	65	134	33
25	300	159	140	148	169	45	271	252	91	55	82	32
26	288	140	262	267	147	51	248	191	82	52	72	30
27	310	115	134	288	130	99	203	158	91	55	162	30
28	302	104	82	303	120	254	181	141	78	90	82	35
29	290	98	71	306	112	281	254	211	73	54	65	30
30	275	93	65	291	---	223	200	277	69	49	59	29
31	230	---	61	307	---	132	---	179	---	99	58	---
TOTAL	8442	5298	2777	5134	6419	2787	7363	5186	3453	2712	2488	1191
MEAN	272	177	89.6	166	221	89.9	245	167	115	87.5	80.3	39.7
MAX	310	311	262	307	307	281	298	293	270	255	243	69
MIN	204	93	53	53	112	45	104	91	69	49	42	29
AC-FT	16740	10510	5510	10180	12730	5530	14600	10290	6850	5380	4930	2360

CAL YR 1983 TOTAL 60388.3 MEAN 165 MAX 314 MIN 2.5 AC-FT 119800
WTR YR 1984 TOTAL 53250 MEAN 145 MAX 311 MIN 29 AC-FT 105600

16589000 NFW HAMAKUA DITCH AT HONOPOU, NEAR HUELO

LOCATION.--Lat 20°53'28", long 156°15'22", Hydrologic Unit 20020000, on right bank 15 ft upstream from tunnel portal, 600 ft downstream from Honopou Stream crossing, and 2.1 mi southwest of Huelo.

PERIOD OF RECORD.--January 1918 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,170 ft above mean sea level (by vertical angles). Prior to May 14, 1921, at site 300 ft upstream at different datum. May 14, 1921, to Mar. 18, 1962, at present site at datum 1.00 ft higher.

REMARKS.--Records good. Ditch diverts from streams between Waikamoi Stream and Halehaku Gulch above Center and Lowrie ditches for irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--66 years, 35.9 ft³/s (26,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 182 ft³/s Nov. 2, 1967; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 167 ft³/s Jan. 13; minimum daily, 0.04 ft³/s Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	15	1.5	.74	36	1.9	101	1.7	1.9	.26	.28	.29
2	117	4.9	1.5	.68	40	1.8	23	6.7	1.6	.26	.20	.24
3	146	3.4	1.4	.66	92	1.6	.94	1.5	1.5	.31	.11	.07
4	165	9.1	1.3	.95	69	1.5	41	1.4	1.4	1.8	7.2	.05
5	163	120	1.2	62	16	1.5	.63	1.2	1.3	29	.32	.05
6	164	4.3	1.1	71	5.9	1.4	116	1.1	1.2	.34	.13	.05
7	163	3.2	1.2	1.4	11	1.3	93	1.1	1.1	4.8	.07	.05
8	161	2.8	1.1	.97	91	1.2	97	1.1	1.1	125	.07	.05
9	124	2.7	1.2	.82	92	1.1	148	.92	1.1	56	.07	.06
10	151	2.4	.94	.67	28	1.1	160	.86	1.2	1.0	.11	.07
11	73	38	.95	1.5	4.7	.98	146	5.3	1.1	.56	.19	.06
12	15	165	.86	70	4.5	.91	21	1.1	.84	.44	.12	.07
13	9.4	116	1.4	167	6.1	.84	1.6	.71	.86	.60	1.2	.07
14	8.6	29	2.0	72	55	.77	142	.64	.73	.36	.16	.07
15	14	58	2.2	18	68	.66	144	25	39	.28	.06	.06
16	109	6.6	1.1	7.8	73	.58	85	24	140	.26	.05	.05
17	127	5.7	.85	3.6	6.0	.63	155	77	29	.23	.05	.05
18	16	4.9	.74	2.7	5.1	.69	156	30	.97	.19	.05	.06
19	150	4.3	.77	2.3	76	.48	114	.99	.72	.16	.05	.07
20	68	3.9	.69	2.0	94	.43	95	2.9	.59	.22	.05	.07
21	7.7	3.5	.61	1.8	39	.40	46	52	38	.33	.05	.06
22	5.0	3.0	.56	1.7	4.1	.38	28	33	1.7	.23	44	.05
23	4.3	9.6	.53	41	11	.40	102	101	.61	.16	88	.06
24	64	61	.48	67	4.4	.38	64	154	.52	.27	1.5	.07
25	148	3.2	49	4.0	3.1	.33	46	34	.43	.21	.47	.06
26	63	2.6	74	78	2.7	.40	30	4.3	.36	.16	.24	.06
27	163	2.2	4.0	115	2.5	2.5	2.2	3.2	.35	.14	5.8	.05
28	156	2.0	1.1	58	2.2	110	1.9	2.7	.32	.23	.28	.06
29	76	1.7	.89	20	2.1	142	17	2.4	.29	.18	.09	.04
30	11	1.6	.75	19	---	105	6.6	100	.26	.13	.05	.05
31	4.9	---	.80	97	---	1.4	---	5.0	---	4.8	.05	---
TOTAL	2791.9	689.6	156.72	989.29	944.4	384.56	2183.87	676.82	270.05	228.91	151.07	2.17
MEAN	90.1	23.0	5.06	31.9	32.6	12.4	72.8	21.8	9.00	7.38	4.87	.072
MAX	165	165	74	167	94	142	160	154	140	125	88	.29
MIN	4.3	1.6	.48	.66	2.1	.33	.63	.64	.26	.13	.05	.04
AC-FT	5540	1370	311	1960	1870	763	4330	1340	536	454	300	4.3

CAL YR 1983 TOTAL 12831.53 MEAN 35.2 MAX 165 MIN .03 AC-FT 25450
WTR YR 1984 TOTAL 9469.36 MEAN 25.9 MAX 167 MIN .04 AC-FT 18780

16592000 LOWRIE DITCH AT HONOPOU GULCH, NEAR HUELO

LOCATION.--Lat 20°54'57", long 156°15'08", Hydrologic Unit 20020000, on left bank 0.2 mi downstream from siphon across Honopou Stream, 1.6 mi west of Huelo, and 2.7 mi northwest of Kailua.

PERIOD OF RECORD.--January 1910 to March 1927, February 1930 to current year. Published as "at Opana weir, near Huelo" 1910-27.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 598.0 ft above mean sea level. Jan. 1, 1910, to Mar. 31, 1927, at site 1.5 mi downstream at different datum.

REMARKS.--Records good. Lowrie ditch receives water from Center ditch at Nailiilihaele Stream and diverts from additional stream westward to Maliko Gulch for irrigation in central Maui. Ditch flow regulated at times. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--70 years (water years 1911-26, 1931-84), 36.5 ft^3/s (26,440 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 116 ft^3/s Oct. 31, 1921; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 108 ft^3/s Nov. 12; minimum daily, 0.36 ft^3/s Apr. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	30	19	8.7	28	26	20	23	25	4.9	5.8	6.1
2	60	29	16	8.2	34	22	17	26	18	4.9	4.6	4.9
3	65	27	14	7.8	67	13	20	29	14	5.4	4.3	3.7
4	78	24	12	10	51	12	22	28	13	5.8	5.8	3.5
5	76	68	11	27	33	12	20	16	15	5.7	5.0	3.2
6	76	28	11	43	25	23	60	8.8	18	4.7	4.1	3.1
7	76	30	12	14	47	21	40	11	20	4.1	3.5	2.9
8	75	31	11	12	62	22	15	14	19	44	3.8	2.8
9	73	29	11	10	66	18	58	11	19	40	3.4	2.9
10	74	29	9.4	13	44	13	56	8.0	18	20	3.8	2.9
11	57	46	9.5	16	33	8.9	1.7	13	18	22	4.6	2.6
12	35	108	8.8	41	32	8.6	.36	9.5	19	22	3.5	2.5
13	31	83	13	72	28	12	1.2	7.7	17	20	6.6	2.4
14	29	63	14	63	52	11	82	7.5	12	15	4.2	2.3
15	26	61	15	42	59	8.8	74	10	9.4	8.6	3.3	2.2
16	61	42	12	33	63	7.9	40	10	29	5.6	2.9	2.2
17	70	36	12	27	42	10	67	13	11	5.0	2.7	2.1
18	38	30	8.6	22	38	8.9	75	14	16	4.8	2.5	2.0
19	84	28	8.4	18	61	7.0	38	8.3	21	4.8	2.4	1.9
20	51	26	8.0	17	67	7.1	18	7.9	20	6.1	2.3	1.8
21	35	31	7.6	17	40	6.9	11	12	16	6.8	2.3	1.8
22	31	28	7.4	16	29	6.6	7.2	9.1	11	5.0	16	1.7
23	28	27	7.1	29	30	7.0	24	60	7.8	4.5	50	1.7
24	42	49	6.9	41	28	6.2	28	88	7.4	6.7	31	1.9
25	78	23	29	23	25	5.9	32	65	6.6	4.6	22	2.5
26	41	28	91	39	23	6.9	37	40	6.1	4.2	19	1.8
27	93	31	20	44	27	7.0	19	31	5.9	4.1	21	1.9
28	78	28	13	63	25	38	14	27	5.6	5.1	9.5	3.6
29	47	25	11	67	22	56	16	25	5.1	4.1	4.4	2.4
30	34	24	9.9	45	---	20	15	48	4.8	3.6	3.9	1.9
31	31	---	9.3	67	---	11	---	24	---	4.4	4.4	---
TOTAL	1747	1142	447.9	955.7	1181	443.7	928.46	704.8	427.7	306.5	262.6	79.2
MEAN	56.4	38.1	14.4	30.8	40.7	14.3	30.9	22.7	14.3	9.89	8.47	2.64
MAX	93	108	91	72	67	56	82	88	29	44	50	6.1
MIN	26	23	6.9	7.8	22	5.9	.36	7.5	4.8	3.6	2.3	1.7
AC-FT	3470	2270	888	1900	2340	880	1840	1400	848	608	521	157

CAL YR 1983 TOTAL 10242.97 MEAN 28.1 MAX 108 MIN .97 AC-FT 20320
WTR YR 1984 TOTAL 8626.56 MEAN 23.6 MAX 108 MIN .36 AC-FT 17110

16594000 HAIKU DITCH AT HONOPOU GULCH, NEAR KAILUA

LOCATION.--Lat 20°55'07", long 156°14'58", Hydrologic Unit 20020000, on right bank on west side of Honopou Gulch, 160 ft below new Government Road, 2.5 mi northwest of Kailua, and 5.0 mi east of Haiku.

PERIOD OF RECORD.--January 1910 to December 1928, February 1930 to current year. Published as "at Peahi weir, near Huelo" prior to July 1919, as "at Manawai Gulch, near Peahi" July 1919 to December 1928, and as "at Kapalalaea Gulch, near Huelo" February 1930 to January 1940. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 421.54 ft above mean sea level. Prior to Oct. 7, 1914, at site at Peahi weir on old Haiku ditch at different datum. Oct. 7, 1914, to Dec. 31, 1928, at site 2.9 mi downstream at different datum. Feb. 19, 1930, to Feb. 20, 1940, at site 0.9 mi downstream at different datum.

REMARKS.--Records good. Ditch diverts from all streams between Nailiilihaele Stream and Maliko Gulch for irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1911, 1914, 1916-28, 1931-84), 24.2 ft³/s (17,530 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 209 ft³/s Nov. 13, 1934, Jan. 8, 9, Feb. 25-27, 1935, Jan. 27, 1938; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 98 ft³/s Nov. 12; minimum daily, 0.29 ft³/s Sept. 26, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	2.7	2.2	1.8	12	2.5	1.7	2.0	2.9	1.4	.78	.59
2	10	2.6	2.1	1.7	31	2.6	1.5	2.0	2.7	1.4	.74	.51
3	28	2.5	2.0	1.6	28	2.3	1.4	1.9	2.7	1.5	.82	.56
4	79	2.7	1.9	1.9	.74	2.4	1.3	1.8	2.6	1.4	.94	.55
5	77	48	1.9	34	1.7	2.3	1.2	1.6	2.5	1.2	.75	.50
6	84	3.2	1.9	36	9.2	2.2	55	1.5	2.5	1.1	.71	.49
7	86	2.8	2.1	2.3	20	2.1	24	1.7	2.3	1.1	.67	[illegible]
6	84	2.6	2.0	1.9	55	2.1	1.6	1.6	2.1	37	.72	.51
9	47	2.6	1.9	1.8	70	2.0	63	1.4	2.1	23	.64	.52
10	68	2.5	1.7	1.7	9.4	2.0	58	1.3	2.1	1.2	.76	.49
11	6.3	19	1.6	2.0	5.3	1.9	75	1.6	1.9	1.1	.73	.42
12	5.0	98	1.5	21	5.3	1.8	21	1.4	1.9	.98	.56	.41
13	3.7	56	2.6	97	4.9	1.7	14	1.3	1.9	1.0	.82	.40
14	2.9	5.5	2.5	62	38	1.7	85	1.3	1.7	.92	.66	.40
15	2.7	22	2.3	8.1	49	1.6	59	1.6	1.8	.96	.59	.40
16	52	4.1	1.9	3.9	50	1.6	2.7	1.4	3.6	1.0	.54	.39
17	48	3.8	1.7	3.4	6.8	1.7	43	1.6	1.8	.82	.55	.39
18	3.5	3.5	1.6	3.8	6.5	3.1	37	1.5	1.6	.77	.53	.39
19	71	3.4	1.5	4.1	16	2.0	31	1.3	1.5	.88	.52	.39
20	11	3.2	1.5	3.8	18	1.7	38	1.3	1.6	1.3	.53	.39
21	3.6	3.1	1.5	3.5	9.5	1.7	35	1.3	1.5	1.3	.54	.39
22	3.4	2.8	1.5	3.4	5.6	1.7	27	1.3	1.5	.86	18	.39
23	3.3	2.9	1.5	19	4.5	1.7	29	47	1.5	.81	31	.39
24	31	15	1.4	34	3.5	1.5	4.0	92	1.6	1.2	.99	.39
25	68	2.9	14	3.7	3.3	1.5	12	14	1.4	.71	.70	.37
26	14	2.6	32	21	3.1	1.6	7.5	5.8	1.3	.66	.62	.29
27	95	2.5	4.0	30	2.9	1.5	2.2	4.8	1.4	.63	.78	.30
28	72	2.4	2.4	19	2.7	38	2.0	4.2	1.3	.75	.56	.34
29	4.0	2.4	2.2	.48	2.6	54	2.1	3.9	1.3	.64	.53	.29
30	3.1	2.3	2.0	29	---	2.2	2.0	32	1.3	.62	.51	.31
31	2.7	---	1.9	82	---	1.6	---	3.4	---	.79	.54	---
TOTAL	1125.2	329.6	102.8	538.88	474.54	148.3	737.2	240.8	57.9	89.00	68.33	12.68
MEAN	36.3	11.0	3.32	17.4	16.4	4.78	24.6	7.77	1.93	2.87	2.20	.42
MAX	95	98	32	97	70	54	85	92	3.6	37	31	.59
MIN	2.7	2.3	1.4	.48	.74	1.5	1.2	1.3	1.3	.62	.51	.29
AC-FT	2230	654	204	1070	941	294	1460	478	115	177	136	25

CAL YR 1983	TOTAL	4286.07	MEAN	11.7	MAX	99	MIN	.18	AC-FT	8500
WTR YR 1984	TOTAL	3925.23	MEAN	10.7	MAX	98	MIN	.29	AC-FT	7790

16599500 OPANA TUNNEL AT KAILIILI

LOCATION.--Lat 20°51'04", long 156°16'17", Hydrologic Unit 20020000, on left bank at tunnel outlet, 0.3 mi north of Kailiili, and 2.7 mi east of Makawao.

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,340 ft, from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Tunnel diverts from Opana Gulch for domestic use in the Kokomo, Makawao, and Pukalani areas. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 3.05 ft³/s (2,210 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 18 ft³/s Mar. 31, 1982; minimum daily, 0.11 ft³/s Nov. 5-10, 1973, Oct. 5, 6, 25, 26, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 10 ft³/s May 23, minimum daily, 0.14 ft³/s Sept. 13-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	3.9	1.5	.96	6.3	2.5	5.5	2.7	1.5	.35	.28	.19
2	3.0	3.6	1.4	.84	7.1	3.0	4.1	3.0	1.2	.37	.23	.17
3	2.7	3.7	1.5	.76	9.2	2.7	2.5	2.6	1.1	.35	.21	.17
4	5.4	3.8	1.5	.72	7.1	2.4	2.8	2.3	.97	.47	.25	.16
5	5.5	4.4	1.3	4.8	5.1	2.2	1.8	2.1	.93	.56	.20	.15
6	4.1	3.6	1.3	5.6	4.5	2.1	6.7	2.0	.82	.39	.20	.15
7	5.5	3.2	1.2	2.6	4.2	1.9	5.1	1.9	.78	.33	.18	.15
8	7.5	3.0	1.1	2.0	7.0	1.8	3.9	1.8	.78	1.3	.17	.15
9	5.6	2.7	1.1	1.5	9.8	1.7	9.3	1.7	.74	1.6	.17	.15
10	7.5	2.6	1.0	1.2	6.5	1.6	9.7	1.6	.85	1.1	.20	.18
11	4.5	3.2	.95	1.3	4.6	1.5	6.4	1.6	.80	.61	.24	.15
12	3.5	7.6	.94	2.8	4.0	1.5	3.9	1.5	.67	.43	.20	.15
13	3.2	5.7	1.1	8.4	3.8	1.4	3.2	1.4	.70	.48	.20	.14
14	3.0	3.7	1.7	5.2	5.4	1.3	9.9	1.5	.62	.47	.20	.14
15	3.1	3.4	1.2	6.1	6.2	1.3	8.6	1.7	.88	.37	.17	.14
16	5.6	3.0	1.1	3.4	6.4	1.2	5.8	2.1	1.5	.34	.17	.14
17	7.1	2.7	.91	2.6	4.3	1.1	5.2	2.7	1.0	.31	.17	.14
18	4.6	2.4	.86	2.2	3.7	1.2	5.7	2.3	.72	.28	.15	.14
19	8.9	2.3	.81	1.8	7.0	1.1	5.0	2.1	.61	.27	.15	.14
20	6.6	2.1	.78	1.5	9.2	1.0	4.6	1.6	.56	.26	.15	.14
21	4.5	2.0	.77	1.5	6.1	.95	4.4	2.1	.57	.26	.15	.14
22	3.8	1.8	.71	1.3	4.4	.91	4.1	1.9	.51	.26	2.0	.14
23	3.4	2.4	.71	3.7	4.1	.90	3.9	10	.48	.24	3.8	.14
24	5.8	3.0	.67	4.9	3.6	.83	3.8	6.0	.45	.25	.82	.14
25	8.8	2.4	3.8	2.6	3.3	.78	4.1	2.4	.42	.23	.40	.14
26	6.8	2.4	9.7	3.1	3.2	.81	3.7	1.6	.40	.23	.30	.14
27	9.9	1.8	6.0	3.9	3.0	1.2	3.4	1.5	.45	.23	.40	.14
28	7.9	1.7	2.6	8.0	2.8	7.0	2.9	1.3	.38	.25	.36	.14
29	6.1	1.5	1.7	8.3	2.6	6.9	3.4	1.6	.36	.21	.26	.14
30	4.9	1.5	1.4	6.9	---	4.3	2.8	3.4	.35	.20	.22	.14
31	4.3	---	1.1	9.9	---	2.5	---	2.1	---	.27	.20	---
TOTAL	167.3	91.1	52.41	110.38	154.5	61.58	146.2	74.1	22.10	13.27	12.80	4.44
MEAN	5.40	3.04	1.69	3.56	5.33	1.99	4.87	2.39	.74	.43	.41	.15
MAX	9.9	7.6	9.7	9.9	9.8	7.0	9.9	10	1.5	1.6	3.8	.19
MIN	2.7	1.5	.67	.72	2.6	.78	1.8	1.3	.35	.20	.15	.14
AC-FT	332	181	104	219	306	122	290	147	44	26	25	8.8

CAL YR 1983 TOTAL 889.20 MEAN 2.44 MAX 10 MIN .28 AC-FT 1760
WTR YR 1984 TOTAL 910.18 MEAN 2.49 MAX 10 MIN .14 AC-FT 1810

NOTE.--No gage-height record Apr. 17 to May 25.

16604500 IAO STREAM AT KEPANIWAI PARK, NEAR WAILUKU

LOCATION.--Lat 20°53'08", long 156°32'32", Hydrologic Unit 20020000, on left bank of Maniania and Waikapu ditch intake, 0.3 mi upstream from Kepaniwai Park, 0.5 mi downstream from Iao Valley State Park, and 2.3 mi west of Wailuku Post Office.

DRAINAGE AREA.--5.98 mi^2.

PERIOD OF RECORD.--May 1983 to September 1984.

GAGE.--Water-stage recorder. Altitude of gage is 780 ft, from topographic map.

REMARKS.--Records fair. No appreciable diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,180 ft^3/s Dec. 25, 1983, gage height, 6.48 ft, from rating curve extended above 120 ft^3/s on basis of slope-area measurement at peak flow; no other peak above base of 1,000 ft^3/s; minimum, 13 ft^3/s Sept. 25-30, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known, 7,540 ft^3/s Dec. 3, 1950, from rating curve based on model study of site 2.3 mi downstream.

DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								70	58	18	47	19
2								86	58	34	71	22
3								68	33	37	55	29
4								189	58	31	78	20
5								95	90	61	61	30
6								86	58	56	43	25
7								239	39	39	40	43
8								120	62	46	32	62
9								65	46	34	28	24
10								52	86	39	24	23
11								76	50	61	28	35
12								49	40	54	62	50
13								97	51	40	29	74
14								49	58	43	24	36
15								38	36	29	23	35
16								38	40	26	50	45
17								62	40	31	33	152
18								36	30	52	30	122
19								30	28	57	23	50
20								28	32	31	22	46
21								60	30	26	22	80
22								32	40	26	22	60
23								27	27	29	20	39
24								44	30	27	48	31
25								48	30	42	24	54
26								52	40	36	36	62
27								45	24	48	26	67
28								31	21	43	28	67
29								32	20	31	22	102
30								27	21	30	24	101
31								28	---	24	21	---
TOTAL								1999	1276	1181	1096	1605
MEAN								64.5	42.5	38.1	35.4	53.5
MAX								239	90	61	78	152
MIN								27	20	18	20	19
AC-FT								3970	2530	2340	2170	3180

16604500 IAO STREAM AT KEPANIWAI PARK, NEAR WAILUKU--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	53	22	41	39	26	24	24	23	19	30	32
2	48	48	21	38	79	184	21	33	22	23	22	22
3	56	48	20	35	41	78	21	34	23	20	20	20
4	172	86	20	34	34	68	24	28	22	19	36	18
5	127	204	20	188	30	45	20	24	27	19	28	18
6	132	73	21	117	28	36	119	24	23	19	21	17
7	124	53	24	60	52	32	44	24	21	18	18	17
8	156	45	22	49	113	30	31	24	26	68	17	16
9	75	41	24	42	84	28	36	23	31	61	17	16
10	95	38	19	40	45	26	65	22	40	29	49	16
11	53	85	19	38	36	24	78	22	26	23	19	15
12	88	322	18	78	36	24	44	24	23	21	47	15
13	51	135	18	281	38	24	48	22	24	20	24	15
14	55	76	18	116	71	24	290	21	21	19	18	14
15	49	64	27	205	162	22	115	35	28	19	18	14
16	155	53	28	87	68	22	106	31	54	20	17	14
17	145	44	20	66	46	22	71	50	32	19	17	15
18	103	40	18	53	54	21	52	29	26	19	16	16
19	251	38	17	44	145	21	45	24	24	20	16	14
20	100	35	16	39	98	20	40	30	23	74	16	14
21	64	33	16	34	56	19	40	34	24	26	19	14
22	49	31	16	32	39	19	51	29	23	20	73	14
23	42	45	16	56	44	19	51	24	23	18	44	14
24	80	77	16	34	46	19	39	24	22	20	25	14
25	91	44	454	32	38	19	33	23	21	18	25	14
26	165	32	259	35	32	23	35	23	20	30	26	13
27	293	29	123	44	30	44	30	22	20	22	43	13
28	112	26	80	47	30	82	28	21	20	22	24	13
29	73	24	62	57	24	36	30	41	19	18	21	13
30	73	22	50	60	---	28	27	49	19	17	19	13
31	56	---	44	82	---	22	---	26	---	21	22	---
TOTAL	3203	1944	1548	2164	1638	1107	1658	864	750	781	807	473
MEAN	103	64.8	49.9	69.8	56.5	35.7	55.3	27.9	25.0	25.2	26.0	15.8
MAX	293	322	454	281	162	184	290	50	54	74	73	32
MIN	42	22	16	32	24	19	20	21	19	17	16	13
AC-FT	6350	3860	3070	4290	3250	2200	3290	1710	1490	1550	1600	938

WTR YR 1984 TOTAL 16937 MEAN 46.3 MAX 454 MIN 13 AC-FT 33590

16614000 WAIHEE RIVER AT DAM, NEAR WAIHEE

LOCATION.--Lat 20°56'21", long 156°32'59", Hydrologic Unit 20020000, on right bank at dam 8 ft upstream from the abandoned Waihee canal intake, 2.6 mi southwest from Waihee Point, and 4.4 mi northwest from Wailiku Post Office.

DRAINAGE AREA.--4.20 mi^2.

PERIOD OF RECORD.--November 1910 to December 1913, November 1983 to September 1984. Low-flow records not equivalent prior to Dec. 31, 1913, due to Waihee canal diverted water above station.

GAGE.--Water-stage recorder. Altitude of gage is 605 ft, from topographic map.

REMARKS.--Records fair. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR CURRENT YEAR.--Peak discharges during period November to September above base of 2,000 ft^3/s and maximum (*), from rating curve extended above 280 ft^3/s on basis of slope-area measurement at gage height 3.99 ft:

Date	Time	Discharge (ft^3/s)	Gage height (ft)
July 20	1630	*2730	4.44
Aug. 22	2000	2530	4.34

Minimum discharge, 28 ft^3/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, NOVEMBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		67	50	43	57	44	46	42	40	37	48	80
2		61	50	43	97	156	43	48	40	40	37	42
3		63	54	43	57	49	44	74	42	39	36	35
4		138	50	44	47	49	44	55	40	37	54	34
5		237	50	226	43	46	42	47	43	37	45	34
6		68	68	68	43	44	160	42	40	36	35	32
7		59	70	47	127	44	47	50	40	39	34	31
8		57	67	44	146	43	44	44	49	168	34	30
9		55	59	43	68	43	58	42	54	136	35	31
10		55	49	43	50	43	97	42	71	43	43	32
11		191	50	44	47	43	85	48	43	39	35	31
12		418	47	147	57	43	49	55	40	37	131	30
13		81	50	471	100	43	52	43	43	37	39	31
14		68	55	68	146	46	382	43	39	36	34	31
15		73	64	92	257	44	60	64	50	35	32	30
16		64	57	50	59	43	86	49	98	34	31	30
17		59	47	50	50	43	66	76	43	34	31	34
18		57	46	50	76	43	54	47	40	34	31	30
19		55	46	47	202	42	67	46	39	36	32	30
20		57	46	47	77	42	67	54	37	265	31	30
21		54	46	46	57	40	55	52	39	40	35	30
22		52	46	46	63	40	47	46	37	36	172	29
23		61	46	112	52	42	80	43	37	35	44	30
24		111	46	54	50	40	50	44	39	43	36	33
25		71	264	52	50	40	43	43	36	40	49	31
26		57	102	54	47	52	44	44	36	43	41	30
27		54	54	57	46	67	43	42	37	111	71	30
28		52	46	57	104	88	43	42	37	42	37	30
29		52	44	69	49	50	44	47	36	36	36	29
30		54	43	66	---	47	42	68	36	36	35	28
31		---	43	67	---	43	---	42	---	39	44	---
TOTAL		2601	1855	2390	2324	1542	2084	1524	1301	1700	1428	988
MEAN		86.7	59.8	77.1	80.1	49.7	69.5	49.2	43.4	54.8	46.1	32.9
MAX		418	264	471	257	156	382	76	98	265	172	80
MIN		52	43	43	43	40	42	42	36	34	31	28
AC-FT		5160	3680	4740	4610	3060	4130	3020	2580	3370	2830	1960

16618000 KAHAKULOA STREAM NEAR HONOKOHAU
(National stream-quality accounting network station)

LOCATION.--Lat 20°58'54", long 156°33'26", Hydrologic Unit 20020000, on right bank 0.5 mi downstream from Kapuna Stream, 1.3 mi south of Kahakuloa, 2.0 mi west of Puu Makawana, and 4.3 mi southeast of Honokohau.

DRAINAGE AREA.--3.47 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1939 to August 1943, September 1947 to November 1970, December 1974 to current year. Records for January 1913 to December 1914 (fragmentary) at site 1.0 mi upstream not equivalent owing to difference in drainage areas.

REVISED RECORDS.--WSP 1319: 1948, 1949(M). WSP 1569: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 330 ft, from topographic map.

REMARKS.--Records good. No diversion above station.

AVERAGE DISCHARGE.--35 years (1940-42, 1948-70, 1976-84), 17.1 ft^3/s (12,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft^3/s Nov. 25, 1970, gage height, 10.57 ft from floodmarks, from rating curve extended above 510 ft^3/s, on basis of slope-area measurements at gage heights 6.70 ft, 8.48 ft, and 10.57 ft; minimum, 3.0 ft^3/s Feb. 9-11, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 497 ft^3/s Aug. 22, gage height, 5.18 ft, no peak above base of 500 ft^3/s; minimum, 3.2 ft^3/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	11	6.3	5.9	7.7	7.6	7.0	5.7	5.7	4.1	5.9	15
2	8.6	8.7	6.0	5.9	39	50	6.1	5.8	5.3	4.2	5.0	7.6
3	12	9.2	11	5.7	20	11	6.0	5.9	5.2	4.3	4.5	4.6
4	92	24	8.2	6.2	8.6	12	6.3	9.1	5.2	4.3	4.4	4.4
5	47	75	6.3	62	7.0	7.8	5.4	10	5.2	4.0	7.6	4.2
6	18	12	16	21	6.9	7.0	36	7.5	5.1	4.1	5.0	4.0
7	20	8.9	26	8.6	31	7.0	9.4	6.0	5.0	4.0	4.2	3.9
8	24	8.2	22	9.3	40	6.5	7.0	5.8	5.6	34	4.1	3.8
9	9.7	8.7	20	6.5	19	6.3	8.5	5.4	8.1	25	4.0	3.7
10	12	7.7	7.7	5.9	8.5	6.1	25	5.3	11	8.5	4.3	4.6
11	8.0	76	9.6	5.9	7.6	5.9	17	6.4	5.8	5.2	4.3	3.9
12	52	148	7.2	45	8.6	5.9	8.2	17	4.9	4.7	4.0	3.7
13	14	25	18	185	17	5.8	8.7	7.1	4.9	5.0	3.9	3.7
14	12	12	21	26	29	5.7	140	5.9	4.9	4.5	3.8	3.6
15	8.0	14	18	24	69	5.7	18	11	5.7	4.3	3.7	3.7
16	60	11	14	9.5	15	5.6	19	7.2	24	4.5	3.6	3.6
17	38	8.9	7.9	8.2	8.9	5.6	19	9.9	7.4	4.3	3.6	3.7
18	26	8.1	7.0	8.2	17	5.5	13	7.7	5.2	4.1	3.6	3.6
19	99	7.8	6.6	7.3	69	5.5	13	6.0	4.8	4.2	3.9	3.4
20	23	7.9	6.4	6.8	16	5.3	12	11	4.6	27	3.8	3.4
21	11	8.0	6.2	6.6	12	5.3	8.3	6.9	4.5	8.7	4.2	3.4
22	10	7.2	6.0	6.1	8.7	5.3	7.4	6.5	4.6	4.7	42	3.3
23	10	7.3	5.7	8.0	7.9	5.2	7.2	5.7	4.5	4.2	14	3.3
24	12	23	5.7	8.4	7.7	5.2	7.8	6.7	4.3	9.3	5.6	3.3
25	25	11	68	6.3	7.7	5.2	7.0	6.5	4.4	4.9	4.8	3.4
26	43	9.2	29	7.7	7.3	7.4	6.2	5.8	4.3	4.6	4.7	3.4
27	105	7.1	9.6	11	7.0	10	6.0	6.4	4.2	12	15	3.3
28	12	6.7	7.4	12	46	17	5.8	5.4	4.2	6.7	5.7	3.3
29	10	6.5	6.8	9.7	14	11	5.9	6.6	4.2	4.7	4.4	3.3
30	8.9	6.3	6.3	9.7	---	7.5	5.8	14	4.1	4.2	4.1	3.2
31	10	---	6.1	15	---	6.2	---	6.9	---	4.8	6.8	---
TOTAL	853.2	584.4	402.0	563.4	563.1	263.1	452.0	233.1	176.9	233.1	198.5	125.3
MEAN	27.5	19.5	13.0	18.2	19.4	8.49	15.1	7.52	5.90	7.52	6.40	4.18
MAX	105	148	68	185	69	50	140	17	24	34	42	15
MIN	8.0	6.3	5.7	5.7	6.9	5.2	5.4	5.3	4.1	4.0	3.6	3.2
AC-FT	1690	1160	797	1120	1120	522	897	462	351	462	394	249

CAL YR 1983 TOTAL 4944.5 MEAN 13.5 MAX 148 MIN 5.2 AC-FT 9810
WTR YR 1984 TOTAL 4648.1 MEAN 12.7 MAX 185 MIN 3.2 AC-FT 9220

16618000 KAHAKULOA STREAM NEAR HONOKOHAU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 03...	1215	762	16	53	6.0	21.0	2.4	8.9	100	120	3600	12
DEC 06...	1300	754	5.9	80	6.1	20.5	.60	8.6	97	29	1900	21
FEB 06...	1115	754	7.1	78	7.4	18.0	1.1	9.4	100	28	1000	20
APR 16...	1300	755	35	53	5.9	19.0	1.7	9.2	100	93	1200	11
JUN 11...	1230	754	6.2	79	6.2	22.0	.60	8.8	102	27	770	20
AUG 13...	1215	756	4.3	93	7.1	23.0	.80	8.3	98	10	930	27

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 03...	0	2.2	1.5	5.3	48	.7	.70	14	3.1	8.0	<.10
DEC 06...	0	4.0	2.6	7.6	43	.7	.90	24	2.8	9.4	<.10
FEB 06...	0	3.8	2.6	7.0	42	.7	.80	24	2.5	11	<.10
APR 16...	4	1.9	1.4	5.9	53	.8	.60	7.0	2.8	10	<.10
JUN 11...	0	4.0	2.5	7.4	43	.7	.90	23	2.8	10	<.10
AUG 13...	0	5.7	3.1	8.3	39	.7	1.0	27	2.2	10	.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT 03...	12	38	41	.05	.11	.030	.60	.010	.020	.010	50
DEC 06...	20	63	62	.09	.13	<.010	.40	.010	.010	<.010	--
FEB 06...	18	57	60	.08	<.10	.030	<.20	<.010	<.010	.020	30
APR 16...	8.1	42	35	.06	<.10	.030	<.20	.040	.010	.020	<10
JUN 11...	19	59	60	.08	<.10	.020	1.3	.080	.040	.020	--
AUG 13...	23	63	70	.09	.10	.040	.20	.020	.020	.020	20

< Actual value is known to be less than the value shown.

16618000 KAHAKULOA STREAM NEAR HONOKOHAU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT 03...	<1	3	<.5	<1	<1	<3	1	45	5	<4	1
FEB 06...	<1	3	<.5	<1	<1	<3	<1	17	<1	<4	<3
APR 16...	<1	3	<.5	<1	<1	<3	1	35	<1	<4	2
AUG 13...	<1	3	<1	<1	10	<3	3	3	2	5	3

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 03...	<.1	<10	3	<1	<1	17	<6	4
FEB 06...	<.1	<10	<1	<1	<1	26	<6	5
APR 16...	<.1	<10	<1	<1	<1	15	<6	7
AUG 13...	<.1	<10	<1	<1	<1	33	<6	16

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 03...	1215	2	.09	100	APR 16...	1300	2	.19	100
DEC 06...	1300	0	.00	100	JUN 11...	1230	1	.02	100
FEB 06...	1115	1	.02	100	AUG 13...	1215	1	.01	100

< Actual value is known to be less than the value shown.

16620000 HONOKOHAU STREAM NEAR HONOKOHAU

LOCATION.--Lat 20°57'48", long 156°35'22", Hydrologic Unit 20020000, on right bank 1,000 ft upstream from intake of Honokohau ditch and 4.1 mi southeast of Honokohau.

DRAINAGE AREA.--4.11 mi².

PERIOD OF RECORD.--September, November, and December 1911 (combined flow of stream and ditch below point of diversion), March 1913 to September 1920, May 1922 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1937: Drainage area. WDR HI-79-1: 1927-48(M), 1949-78(P).

GAGE.--Water-stage recorder and masonry control. Altitude of gage is 870 ft, from topographic map. Prior to Mar. 7, 1913, nonrecording gage at site just below Honokohau ditch intake at different datum.

REMARKS.--Records good. No diversion above station. All medium and low flow, together with the inflow from two development tunnels below station, is diverted into Honokohau ditch. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--68 years (water years 1914-19, 1923-84) 39.3 ft³/s (28,470 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,120 ft³/s revised, Dec. 14, 1942, gage height, 8.40 ft from rating curve extended above 547 ft³/s, on basis of slope-area measurement at gage height 6.76 ft; minimum, 8.4 ft³/s May 1, 1945, Jan. 5, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)
July 20	1600	1350	5.41
Aug 22	2000	*1620	5.67

Minimum discharge, 11 ft³/s Sept. 5-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	28	19	17	20	17	20	16	15	13	31	25
2	21	22	19	17	66	109	17	22	15	18	16	17
3	43	23	18	17	31	22	17	41	15	15	14	12
4	149	50	18	17	19	24	19	21	15	14	43	12
5	62	118	18	126	17	17	16	19	17	13	18	12
6	37	26	20	42	17	17	118	16	15	13	14	12
7	55	21	26	19	39	17	22	24	14	13	12	12
8	86	20	21	17	99	16	18	22	19	69	12	11
9	21	20	25	17	46	16	33	15	26	52	13	11
10	51	19	18	17	20	16	83	15	47	18	28	12
11	21	56	18	17	19	16	62	15	19	14	16	11
12	105	228	18	60	32	16	25	19	15	13	57	11
13	30	43	24	154	36	16	20	15	17	15	20	11
14	28	23	23	28	62	16	219	15	15	13	13	12
15	24	26	25	58	201	16	33	36	20	13	12	11
16	111	25	30	19	29	15	49	20	63	13	12	11
17	56	21	18	18	19	15	38	53	19	12	12	11
18	43	20	18	19	41	15	26	20	15	12	12	12
19	137	20	17	17	110	15	23	16	15	13	12	11
20	37	20	17	17	55	15	45	26	14	157	12	11
21	24	20	17	17	24	15	32	24	15	19	12	11
22	22	19	17	17	39	15	31	18	14	13	116	11
23	21	30	17	64	23	16	54	15	14	13	23	11
24	62	67	17	25	23	16	29	15	15	18	15	11
25	51	26	154	23	21	15	17	15	14	13	21	14
26	138	22	56	31	18	20	17	15	13	25	20	12
27	147	20	23	45	17	36	16	15	14	27	37	11
28	28	19	18	42	29	68	16	15	14	22	14	11
29	24	19	18	39	19	26	20	24	13	14	12	11
30	27	19	17	38	---	20	17	49	13	13	12	11
31	24	---	17	50	---	16	---	16	---	18	13	---
TOTAL	1725	1090	781	1104	1191	689	1152	667	549	708	674	362
MEAN	55.6	36.3	25.2	35.6	41.1	22.2	38.4	21.5	18.3	22.8	21.7	12.1
MAX	149	228	154	154	201	109	219	53	63	157	116	25
MIN	21	19	17	17	17	15	16	15	13	12	12	11
AC-FT	3420	2160	1550	2190	2360	1370	2280	1320	1090	1400	1340	718

CAL YR 1983	TOTAL	11359	MEAN	31.1	MAX	228	MIN	14	AC-FT 22530
WTR YR 1984	TOTAL	10692	MEAN	29.2	MAX	228	MIN	11	AC-FT 21210

AVAILABLE

16638500 KAHOMA STREAM AT LAHAINA

LOCATION.--Lat 20°53'10", long 156°40'36", Hydrologic Unit 20020000, on right bank 0.2 mi west of Kelawea, 0.6 mi northeast of Lahaina, 0.6 mi downstream from Kanaha Stream, and 0.9 mi upstream from mouth.

DRAINAGE AREA.--5.22 mi².

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WSP 2137: 1963-65(P).

GAGE.--Water-stage recorder. Altitude of gage is 90 ft, from topographic map.

REMARKS.--Records fair. Diversion above station by Pioneer Mill Co. for irrigation of sugarcane. Diversion from Kanaha Stream above station by Maui County Board of Water Supply for domestic use. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year is published elsewhere in this report.

AVERAGE DISCHARGE.--21 years (water years 1964-84), 3.38 ft³/s (2,450 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,490 ft³/s July 11, 1965, gage height, 11.03 ft, from rating curve extended above 332 ft³/s on basis of slope-area measurements at gage heights 7.39 ft, 7.58 ft, 8.07 ft, 9.12 ft, and 11.03 ft; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 600 ft³/s Dec. 25, gage height, 7.21 ft, no other peak above base of 590 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	25	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.59	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	6.4	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.86	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	6.5	.00	.00	.00	.00	.00
15	.00	.00	.00	9.5	.91	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
17	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	12	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	3.0	.00
23	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.36	.00
24	.00	.00	.00	3.3	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	65	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	6.8	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.52	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	2.0	.00	3.6	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	4.3	.00	.00	.00	.14	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	7.9	---	.00	---	.00	---	.00	.00	---
TOTAL	.56	.00	71.80	28.30	13.47	28.60	14.74	.14	.00	.00	3.36	.00
MEAN	.018	.00	2.32	.91	.46	.92	.49	.005	.00	.00	.11	.00
MAX	.52	.00	65	9.5	12	25	6.5	.14	.00	.00	3.0	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.1	.00	142	56	27	57	29	.3	.00	.00	6.7	.00

CAL YR 1983	TOTAL	168.94	MEAN	.46	MAX	65	MIN	.00	AC-FT	335
WTR YR 1984	TOTAL	160.97	MEAN	.44	MAX	65	MIN	.00	AC-FT	319

16700000 WAIAKEA STREAM NEAR MOUNTAIN VIEW

LOCATION.--Lat 19°38'30", long 155°10'28", Hydrologic Unit 20010000, on left bank 200 ft upstream from Olaa Flume Road, 7.3 mi northwest of Mountain View, and 8.0 mi southwest of Hilo Post Office.

DRAINAGE AREA.--17.4 mi^2.

PERIOD OF RECORD.--September 1930 to current year. Prior to July 1960, published as "at middle flume house, near Mountain View."

REVISED RECORDS.--WSP 2137: 1939(M), 1942(M), 1944-45(M), 1947(M), 1949(P), 1950-51(M), 1952-53(P), 1955(P), 1956(M), 1957-58(P), 1960(M).

GAGE.--Water-stage recorder and combined Parshall flume and concrete-weir control. Datum of gage is 1,934 ft above mean sea level (by stadia survey). Prior to Jan. 21, 1938, at datum 0.23 ft lower.

REMARKS.--Records good. No diversion above station. Large part of flow comes from 3 tunnels. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--54 years, 11.7 ft^3/s (8,480 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 565 ft^3/s Mar. 14, 1942, Aug. 26, 1970, from rating curve extended above 160 ft^3/s; maximum gage height, 4.45 ft Aug. 26, 1970; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52 ft^3/s Oct. 24, gage height, 2.78 ft, no peak above base of 100 ft^3/s; minimum, 0.12 ft^3/s Dec. 31 and several days in January.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	17	2.8	.12	11	8.5	1.7	16	4.2	3.7	1.9	4.8
2	24	16	2.5	.12	11	8.1	1.6	15	4.0	3.8	2.0	4.7
3	23	14	2.4	.12	9.9	7.5	1.4	14	3.8	3.5	2.0	4.4
4	21	13	2.2	.12	9.3	7.3	2.0	13	3.6	3.4	1.7	4.3
5	19	12	2.0	.40	8.8	6.9	1.5	13	3.4	3.4	2.7	4.1
6	17	11	2.0	.52	8.2	6.2	2.6	12	3.3	3.2	3.0	4.0
7	22	9.8	1.8	.24	7.5	5.7	4.5	11	3.0	3.1	2.8	3.8
8	32	9.2	1.7	.16	8.8	5.2	4.6	9.8	2.9	3.2	2.5	3.6
9	28	8.3	1.6	.12	8.7	4.8	8.1	9.0	2.7	3.5	2.4	3.3
10	29	7.5	1.4	.12	7.9	4.5	15	8.4	2.5	3.2	2.5	3.1
11	28	6.9	1.3	.12	7.3	4.2	14	7.9	2.5	3.1	2.4	3.0
12	26	6.7	1.2	.12	6.9	4.0	13	7.3	2.5	2.9	2.2	2.8
13	23	6.9	1.1	.16	6.4	3.8	12	6.6	2.6	2.7	2.1	2.7
14	21	6.1	1.0	.16	6.2	3.6	17	6.1	2.4	2.5	2.0	2.4
15	19	5.7	1.0	.12	7.1	3.3	15	5.7	2.7	2.4	2.0	2.2
16	19	5.2	1.0	.12	9.4	3.0	14	5.4	5.0	2.3	2.0	2.0
17	18	5.0	.90	.12	8.2	2.9	15	5.2	5.3	2.2	1.9	2.0
18	17	4.7	.80	.12	7.6	2.6	16	5.2	5.1	2.0	1.7	1.7
19	16	4.9	.75	.12	7.3	2.4	18	5.1	4.7	1.9	1.7	1.6
20	16	5.2	.70	.12	13	2.0	18	5.5	4.6	1.8	1.7	1.5
21	15	4.6	.60	.12	12	2.0	18	5.5	4.5	1.7	1.7	1.4
22	14	4.3	.52	.12	12	1.7	18	5.2	4.4	1.5	2.2	1.3
23	14	4.2	.48	7.8	11	1.6	22	6.0	4.3	1.4	9.7	1.2
24	21	4.0	.40	6.2	11	1.4	24	6.0	4.4	1.3	5.7	1.2
25	20	3.9	.52	3.8	10	1.2	24	5.5	4.2	1.2	5.0	1.1
26	19	3.7	.60	3.9	9.8	1.1	23	5.3	4.0	1.2	5.2	.95
27	25	3.5	.36	3.8	9.3	1.0	21	5.1	4.1	3.2	6.3	.80
28	22	3.3	.24	6.4	8.7	1.2	19	4.7	3.9	3.0	5.8	.75
29	21	3.2	.20	11	9.5	3.1	18	4.7	3.8	2.2	5.7	.70
30	19	3.0	.16	12	---	2.3	17	4.6	3.7	2.0	5.2	.60
31	18	---	.12	13	---	2.1	---	4.4	---	1.8	4.9	---
TOTAL	650	212.8	34.35	71.46	263.8	115.2	399.0	238.2	112.1	78.3	100.6	72.00
MEAN	21.0	7.09	1.11	2.31	9.10	3.72	13.3	7.68	3.74	2.53	3.25	2.40
MAX	32	17	2.8	13	13	8.5	24	16	5.3	3.8	9.7	4.8
MIN	14	3.0	.12	.12	6.2	1.0	1.4	4.4	2.4	1.2	1.7	.60
AC-FT	1290	422	68	142	523	228	791	472	222	155	200	143

CAL YR 1983 TOTAL 2614.32 MEAN 7.16 MAX 32 MIN .00 AC-FT 5190
WTR YR 1984 TOTAL 2347.81 MEAN 5.41 MAX 32 MIN .12 AC-FT 4660

16700900 OLAA FLUME SPRING NEAR KAUMANA

LOCATION.--Lat 19°41'59", long 155°11'13", Hydrologic Unit 20010000, on left bank 58 ft downstream from tunnel entrance, 3.3 mi northwest of Kaumana School, and 6.5 mi southwest of Hilo Post Office.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,970 ft, from topographic map.

REMARKS.--Records good. County of Hawaii, Department of Water Supply, diverts by 16-inch pipeline 50 ft above station for domestic use in the Kaumana and Piihonua areas since Oct. 2, 1978. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years, 7.99 ft³/s (5,790 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft³/s Jan. 8, 1975; minimum daily, 0.02 ft³/s Mar. 24, 26-30, Apr. 1, 1983, Sept. 19, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 13 ft³/s Apr. 11, 12; minimum daily, 0.02 ft³/s Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	5.3	6.2	.05	10	4.6	.09	9.0	6.6	2.0	2.5	1.9
2	9.9	4.2	6.0	.05	8.4	3.7	.29	9.0	6.4	2.0	2.5	2.0
3	11	3.5	6.0	.05	6.0	3.2	.15	9.0	6.4	2.0	2.5	2.1
4	9.9	2.9	5.8	.05	4.8	3.4	.26	8.5	6.4	2.0	2.5	2.0
5	8.4	2.2	5.4	.04	3.9	4.2	.80	8.5	5.8	2.0	2.5	2.2
6	7.3	1.6	4.4	.03	3.8	3.4	.32	8.5	2.8	1.7	2.6	2.0
7	6.0	1.5	4.4	.04	3.4	2.6	2.0	8.5	.70	1.5	2.7	1.9
8	9.5	1.5	4.4	.04	2.8	2.6	5.4	8.5	1.0	1.5	2.8	1.9
9	9.5	1.5	3.9	.04	3.7	2.6	7.9	7.1	.90	1.6	2.7	1.7
10	9.9	1.4	3.5	.04	3.9	2.6	11	6.6	.80	2.0	2.7	1.9
11	10	1.4	3.3	.05	3.4	2.6	13	6.6	.50	2.1	2.7	1.9
12	11	1.4	3.1	.05	3.3	2.6	13	6.4	.50	2.1	2.7	1.7
13	9.5	1.9	2.6	.05	3.3	2.6	12	6.4	.46	2.1	2.7	1.6
14	8.1	3.3	2.5	.05	3.3	2.6	9.0	6.0	.43	2.1	2.7	1.4
15	4.8	2.2	2.3	.05	3.3	2.6	9.2	6.2	.43	2.1	2.5	1.3
16	4.4	4.8	1.0	.05	3.8	2.6	9.0	6.0	.46	2.1	2.6	1.2
17	9.5	6.4	.43	.05	4.4	2.5	8.4	6.0	.60	2.0	2.6	1.1
18	8.6	6.4	.43	.05	3.9	2.3	8.6	6.0	1.3	2.0	2.7	.26
19	8.1	6.2	.43	.05	3.8	2.2	12	6.2	1.4	1.9	2.7	.02
20	6.2	6.9	.43	.05	3.8	2.1	11	6.2	.90	1.9	2.7	.03
21	4.0	6.9	.43	.05	6.2	2.0	9.9	6.4	1.1	1.9	2.7	.03
22	3.8	6.6	.22	.05	5.8	.26	9.5	6.2	1.3	1.7	2.1	.03
23	3.5	6.6	.04	.07	4.8	.04	10	5.4	1.2	1.7	2.5	.03
24	6.6	6.6	.04	2.4	3.9	.04	12	5.8	1.1	1.6	3.9	.03
25	11	6.6	.04	6.9	5.1	.04	12	7.1	1.0	1.6	3.2	.04
26	11	6.6	.04	6.0	6.2	.04	10	7.1	1.0	2.0	2.6	.04
27	9.7	6.6	.05	5.6	5.4	.04	10	6.9	1.0	2.1	2.8	.05
28	11	6.6	.05	3.9	5.1	.04	9.5	6.6	1.7	2.0	3.9	.05
29	10	6.4	.05	6.0	4.8	.05	9.5	6.6	2.1	2.3	3.5	.07
30	8.4	6.4	.05	9.0	---	.09	9.0	6.6	2.0	2.5	2.7	.07
31	6.6	---	.05	12	---	.11	---	6.6	---	2.5	2.2	---
TOTAL	257.9	132.4	67.58	52.90	134.3	60.35	234.81	216.5	58.28	60.6	84.7	30.55
MEAN	8.32	4.41	2.18	1.71	4.63	1.95	7.83	6.98	1.94	1.95	2.73	1.02
MAX	11	6.9	6.2	12	10	4.6	13	9.0	6.6	2.5	3.9	2.2
MIN	3.5	1.4	.04	.03	2.8	.04	.09	5.4	.43	1.5	2.1	.02
AC-FT	512	263	134	105	266	120	466	429	116	120	168	61

CAL YR 1983 TOTAL 1245.72 MEAN 3.41 MAX 14 MIN .02 AC-FT 2470
WTR YR 1984 TOTAL 1390.87 MEAN 3.80 MAX 13 MIN .02 AC-FT 2760

16700950 LYMAN SPRINGS NO. 2 NEAR PIIHONUA

LOCATION.--Lat 19°42'02", long 155°10'36", Hydrologic Unit 20010000, on right bank 3 ft downstream from tunnel entrance, 2.7 mi southwest of Piihonua, and 5.8 mi southwest of Hilo Post Office.

PERIOD OF RECORD.--February 1981 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 1,700 ft, from topographic map.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 18 ft^3/s Jan. 26, 1982; minimum daily, 0.03 ft^3/s Mar. 23, 24, 31, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 10 ft^3/s Oct. 8; minimum daily, 0.65 ft^3/s Jan. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	5.0	3.9	.84	5.6	4.3	4.2	5.4	4.2	3.7	3.1	4.3
2	6.4	4.9	3.7	.78	5.3	4.1	4.0	5.8	3.9	4.0	3.3	4.0
3	6.1	4.8	3.5	.75	5.0	3.8	4.0	5.3	3.9	3.5	3.9	4.0
4	5.9	4.6	3.4	.71	4.8	4.0	5.2	5.3	3.8	3.5	3.5	3.9
5	6.0	4.5	3.4	1.2	4.7	4.3	4.3	5.2	3.7	3.5	4.7	3.9
6	5.6	4.4	3.2	2.3	4.5	4.1	4.8	5.1	3.4	3.1	4.4	3.8
7	7.9	4.4	3.1	1.5	4.4	4.0	5.7	5.1	3.3	2.5	3.9	3.4
8	10	4.3	3.0	1.5	6.3	3.9	5.8	4.8	3.1	3.5	3.8	3.2
9	6.5	4.3	2.9	1.4	5.2	3.7	6.5	4.6	3.1	3.6	3.8	3.1
10	8.2	4.1	2.8	1.4	4.8	3.5	8.5	4.5	3.0	3.4	4.0	3.0
11	6.5	4.1	2.7	1.2	4.7	3.4	6.9	4.5	3.1	3.2	3.9	2.9
12	6.0	4.4	2.6	1.0	4.5	3.2	5.8	4.4	3.9	3.3	3.8	2.8
13	5.5	5.2	2.5	.92	4.4	3.1	5.7	4.3	4.0	3.1	3.8	2.6
14	5.2	4.5	2.5	.92	4.4	2.9	6.9	4.3	3.4	3.0	3.5	2.5
15	5.1	4.4	2.5	.92	5.2	2.7	5.8	4.1	3.5	2.8	3.5	2.3
16	6.9	4.4	2.4	.92	5.7	2.5	5.4	4.1	5.6	2.7	4.0	2.2
17	5.5	4.3	2.3	.87	4.9	2.3	5.7	4.1	4.8	2.5	3.5	2.0
18	5.2	4.3	2.2	.82	4.9	2.1	6.7	4.4	4.5	2.4	3.3	1.8
19	5.1	4.4	2.1	.76	4.8	2.0	7.6	4.5	4.5	2.3	3.1	1.7
20	5.0	5.1	2.1	.76	7.0	1.9	6.9	4.9	4.4	2.1	3.0	1.5
21	4.9	4.6	2.0	.70	5.8	1.6	6.3	5.3	4.3	2.3	2.9	1.4
22	4.9	4.5	1.6	.65	5.4	1.5	6.1	4.4	4.3	2.1	3.3	1.4
23	5.9	4.4	1.3	3.1	5.2	1.4	7.6	4.5	4.2	2.1	6.5	1.2
24	7.6	4.4	1.0	5.8	5.1	1.3	7.4	4.8	4.3	2.0	4.8	.99
25	6.2	4.7	.90	4.6	4.9	1.1	6.0	4.4	4.2	1.8	4.5	.87
26	5.7	4.7	1.1	5.3	4.7	1.0	5.7	4.4	4.1	1.8	4.9	.96
27	9.3	4.4	1.0	4.9	4.6	.92	5.7	4.3	3.9	3.3	5.3	.94
28	5.9	4.3	1.0	5.7	4.4	1.0	5.6	4.3	3.6	3.1	4.7	.93
29	5.7	4.1	1.0	6.3	4.3	4.4	6.0	4.5	3.4	2.5	4.7	.83
30	5.4	4.1	.99	6.0	---	4.2	5.6	4.4	3.2	2.8	4.5	.80
31	5.2	---	.94	7.0	---	4.2	---	4.3	---	3.1	4.3	---
TOTAL	192.2	134.6	69.63	71.52	145.5	88.42	178.4	144.3	116.6	88.6	124.2	69.22
MEAN	6.20	4.49	2.25	2.31	5.02	2.85	5.95	4.65	3.89	2.86	4.01	2.31
MAX	10	5.2	3.9	7.0	7.0	4.4	8.5	5.8	5.6	4.0	6.5	4.3
MIN	4.9	4.1	.90	.65	4.3	.92	4.0	4.1	3.0	1.8	2.9	.80
AC-FT	381	267	138	142	289	175	354	286	231	176	246	137

CAL YR 1983 TOTAL 1384.89 MEAN 3.79 MAX 10 MIN .03 AC-FT 2750
WTR YR 1984 TOTAL 1423.19 MEAN 3.89 MAX 10 MIN .65 AC-FT 2820

16704000 WAILUKU RIVER AT PIIHONUA

LOCATION.--Lat 19°42'56", long 155°09'12", Hydrologic Unit 20010000, on right bank 0.2 mi downstream from Hookelekele Stream, 0.9 mi west of Piihonua, and 4.1 mi west of Hilo Post Office. Prior to Nov. 16, 1977, at opposite site on left bank.

DRAINAGE AREA.--230 mi², of which 81 mi² probably is noncontributing.

PERIOD OF RECORD.--July 1928 to July 1940, October 1940 to December 1947, April 1948 to current year. Monthly discharge only July 1928, published in WSP 1319. Prior to July 1960, published as "above Hilo Boarding School ditch intake, near Hilo."

REVISED RECORDS.--WSP 865: 1929-36(M). WSP 965: 1941. WDR HI-80-1: 1929-79(P). WDR HI-81-1: 1940(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,090 ft, from topographic map. Prior to Nov. 16, 1977, at opposite site on left bank at same datum.

REMARKS.--Records fair. Hawaii County Board of Water Supply diverts about 6 ft³/s above station for domestic supply. Kapehu ditch diverted from Kapehu Stream into Wailuku River above station 1938-63. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--53 years (water years 1929-39, 1942-47, 1949-84), 280 ft³/s (202,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,200 ft³/s, revised, Aug. 11, 1940, gage height, 28.6 ft, from floodmarks, from rating curve extended above 13,000 ft³/s; minimum, 0.15 ft³/s Jan. 20, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,200 ft³/s Jan. 24, gage height, 9.25 ft, no peak above base of 8,700 ft³/s; minimum, 0.80 ft³/s Jan. 19, 20, 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	512	118	20	1.2	191	42	67	182	33	22	23	59
2	462	99	19	1.2	128	39	53	242	28	54	34	51
3	294	83	19	1.0	92	35	39	173	25	28	52	35
4	227	72	25	1.3	70	35	84	133	24	22	35	31
5	216	65	20	6.5	57	50	48	111	22	21	51	26
6	168	58	17	54	46	33	52	97	21	21	92	24
7	392	49	14	19	40	26	210	83	21	24	53	21
8	1010	43	11	7.5	179	23	235	86	17	39	37	19
9	496	37	11	3.5	172	20	434	67	16	50	30	16
10	477	34	9.3	1.9	99	19	1310	58	15	36	33	16
11	348	31	8.4	1.3	70	16	831	53	17	24	35	16
12	266	34	6.4	1.1	57	12	366	48	26	22	34	12
13	212	240	5.2	1.2	50	10	229	41	35	20	27	9.6
14	170	70	4.8	1.2	71	10	285	36	28	18	22	8.2
15	144	49	4.8	1.1	107	10	285	33	26	13	20	7.1
16	389	39	4.2	1.1	381	8.4	185	33	179	12	32	6.5
17	313	35	4.6	.98	131	6.0	168	31	239	11	26	5.5
18	201	31	3.5	.93	91	5.0	336	60	100	8.9	19	4.1
19	153	77	3.0	.88	81	4.8	972	45	70	8.6	17	4.0
20	127	134	2.7	.89	551	4.2	611	70	58	7.6	16	4.3
21	114	69	2.4	.97	394	3.7	567	96	54	14	16	4.4
22	98	51	1.5	.85	211	3.3	377	69	45	12	20	3.0
23	150	47	1.4	166	151	2.9	1040	68	39	8.1	477	2.4
24	997	41	1.3	844	116	2.6	915	119	36	6.7	155	4.0
25	691	37	6.6	146	87	2.2	597	65	38	5.0	98	4.3
26	302	55	12	314	71	1.9	403	71	31	5.2	92	2.6
27	766	35	6.2	148	63	2.6	255	55	29	69	170	2.1
28	373	29	2.8	265	52	3.5	192	44	28	177	109	1.9
29	251	25	2.4	437	51	185	327	50	23	45	77	1.9
30	184	22	1.7	440	---	141	251	52	20	27	58	1.9
31	145	---	1.4	344	---	89	---	40	---	20	53	---
TOTAL	10648	1809	252.6	3213.60	3860	846.1	11724	2411	1343	851.1	2013	403.8
MEAN	343	60.3	8.15	104	133	27.3	391	77.8	44.8	27.5	64.9	13.5
MAX	1010	240	25	844	551	185	1310	242	239	177	477	59
MIN	98	22	1.3	.85	40	1.9	39	31	15	5.0	16	1.9
AC-FT	21120	3590	501	6370	7660	1680	23250	4780	2660	1690	3990	801

CAL YR 1983 TOTAL 43638.03 MEAN 120 MAX 1450 MIN .22 AC-FT 86560
WTR YR 1984 TOTAL 39375.20 MEAN 108 MAX 1310 MIN .85 AC-FT 78100

16713000 WAILUKU RIVER AT HILO
(National stream-quality accounting network station)

LOCATION.--Lat 19°43'43", long 155°05'40", Hydrologic Unit 20010000, on right bank 500 ft upstream from Wailuku bridge and 0.2 mi west of Hilo Post Office.

DRAINAGE AREA.--256 mi^2, of which 81 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1977 to September 1979, June 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 80 ft, from topographic map.

REMARKS.--Records good. Hilo Electric Light Co. diverts above station for Hydro-plant use.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,500 ft^3/s Nov. 17, 1979, gage height, 34.57 ft, from floodmarks and from rating curve extended above 6,840 ft^3/s on basis of slope-area measurements at gage heights 23.30 ft and 34.57 ft; minimum, 4.6 ft^3/s July 17, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,920 ft^3/s Apr. 28, gage height, 9.54 ft, no peak above base of 9,500 ft^3/s; minimum, 12 ft^3/s Dec. 22, Jan. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	950	214	44	15	325	43	74	367	30	42	45	79
2	875	171	42	14	210	31	56	470	30	112	71	69
3	600	131	45	13	138	34	22	349	30	63	97	30
4	484	99	47	12	92	28	115	255	26	46	76	26
5	470	81	49	34	72	71	49	208	24	48	85	26
6	358	63	31	136	50	26	25	180	20	37	194	25
7	782	49	28	23	42	23	424	150	19	39	111	28
8	1900	38	24	24	406	21	488	134	25	72	71	49
9	930	32	22	18	358	29	701	94	38	136	52	39
10	920	28	19	19	169	39	2350	78	37	87	54	39
11	684	30	18	16	108	30	1480	74	36	52	71	37
12	548	30	18	14	79	27	676	59	64	44	71	29
13	470	413	21	13	61	21	452	50	83	35	58	23
14	331	79	20	13	100	23	573	38	71	34	45	23
15	278	38	20	13	135	22	648	53	61	29	47	20
16	681	52	19	14	766	22	414	57	359	28	85	18
17	580	69	18	16	216	17	364	52	580	25	61	25
18	355	58	17	18	131	15	628	112	230	19	44	28
19	255	130	16	17	120	20	1780	85	167	20	30	25
20	210	316	14	16	953	18	1130	139	134	19	32	25
21	196	158	13	17	750	22	1080	196	139	42	34	28
22	153	111	16	16	394	30	730	123	126	28	45	25
23	193	98	20	253	262	29	2270	144	105	18	972	23
24	1640	95	20	1620	200	27	1640	258	101	16	325	26
25	1200	75	24	180	130	25	985	110	105	14	177	28
26	540	105	23	451	91	24	770	122	81	23	186	37
27	1420	79	19	173	76	26	533	81	74	124	407	32
28	740	59	22	450	59	30	410	56	76	453	242	30
29	505	53	28	697	71	370	660	60	57	99	162	30
30	370	45	18	782	---	292	512	72	49	51	95	31
31	275	---	16	600	---	111	---	44	---	44	65	---
TOTAL	19893	2999	751	5697	6564	1546	22039	4270	2977	1899	4110	953
MEAN	642	100	24.2	184	226	49.9	735	138	99.2	61.3	133	31.8
MAX	1900	413	49	1620	953	370	2350	470	580	453	972	79
MIN	153	28	13	12	42	15	22	38	19	14	30	18
AC-FT	39460	5950	1490	11300	13020	3070	43710	8470	5900	3770	8150	1890

CAL YR 1983	TOTAL	76983	MEAN	211	MAX	2370	MIN	10	AC-FT	152700
WTR YR 1984	TOTAL	73698	MEAN	201	MAX	2350	MIN	12	AC-FT	146200

16713000 WAILUKU RIVER AT HILO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1977 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: March 1977 to September 1979. June 1980 to December 1983 (discontinued).

INSTRUMENTATION.--Automatic pumping sediment sampler since March 1977 to December 1983.

REMARKS.--In addition to the sediment sampler record, water-quality samples were collected at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 292 mg/L Sept. 21, 1980; minimum daily mean, 0 mg/L on several days in 1981, 1982, and 1983.
SEDIMENT DISCHARGE: Maximum daily, 14,100 tons Feb. 20, 1979; minimum daily, 0 ton on several days in 1981, 1982, and 1983.

EXTREMES FOR PERIOD OF OCTOBER TO DECEMBER 1983.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 29 mg/L Oct. 24; minimum daily mean, 1 mg/L for many days.
SEDIMENT DISCHARGE: Maximum daily, 141 tons Oct. 24, minimum daily, less than 0.04 ton on Dec. 19-21.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 24...	1325	760	1090	25	6.7	20.0	13	9.0	99	310	600	8
DEC 20...	0945	760	14	81	7.2	20.5	.60	9.0	100	70	880	32
FEB 27...	1250	760	82	60	7.1	20.5	1.0	9.0	100	24	500	21
APR 24...	0945	760	2280	28	6.7	19.5	4.5	9.2	100	220	14000	9
JUL 11...	1030	765	55	62	7.6	23.0	1.5	8.3	96	49	660	29
AUG 20...	0930	755	39	64	7.7	23.0	.90	8.4	99	37	560	26

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
OCT 24...	0	1.5	.94	2.0	35	.3	.50	8.0	4.8	2.9	<.10
DEC 20...	0	6.5	3.7	4.7	24	.4	.50	32	3.3	5.5	<.10
FEB 27...	0	4.2	2.6	3.5	26	.3	.60	23	3.0	4.7	<.10
APR 24...	0	1.8	1.1	2.3	34	.3	.50	9.0	4.5	3.2	<.10
JUL 11...	7	7.0	2.9	3.6	21	.3	.40	22	2.9	4.2	<.10
AUG 20...	4	5.3	3.0	3.9	24	.3	.50	22	3.3	4.5	<.10

< Actual value is known to be less than the value shown.

16713000 WAILUKU RIVER AT HILO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT 24...	5.1	22	23	.03	.12	.060	1.0	.070	.010	.010	--
DEC 20...	18	59	62	.08	.12	<.010	<.20	<.010	<.010	.010	30
FEB 27...	13	39	46	.05	.16	.020	.20	.020	<.010	.050	40
APR 24...	6.2	28	25	.04	.12	.020	.50	.030	.010	.020	--
JUL 11...	13	34	47	.05	<.10	.020	.20	.010	.010	.020	30
AUG 20...	13	38	47	.05	.16	.030	.20	<.010	.020	.020	30

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
DEC 20...	1	5	.8	<1	<1	<3	<1	29	1	<4	2
FEB 27...	<1	5	<.5	<1	<1	<3	2	39	<1	<4	3
JUL 11...	<1	6	<1	<1	<1	<3	1	61	<1	<4	3
AUG 20...	<1	6	<1	<1	<1	<3	4	58	2	4	6

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC 20...	<.1	<10	3	<1	<1	39	<6	10
FEB 27...	<.1	<10	<1	<1	<1	[illegible]	<6	10
JUL 11...	.7	<10	<1	<1	<1	33	<6	87
AUG 20...	.2	<10	3	<1	<1	33	<6	59

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 24...	1325	29	85	100
DEC 20...	0945	2	.08	100
FEB 27...	1250	1	.22	100
APR 24...	0945	10	62	100
JUL 11...	1030	2	.30	100
AUG 20...	0930	2	.21	100

< Actual value is known to be less than the value shown.

16713000 WAILUKU RIVER AT HILO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	37	33	35	90	81	85	70	67	68	87	82	84
2	37	35	36	97	88	92	71	68	69	87	82	84
3	42	37	41	100	58	90	72	68	70	87	82	85
4	46	42	44	114	99	105	72	69	70	88	83	85
5	47	45	46	120	114	116	73	70	71	87	69	83
6	57	46	50	126	117	121	74	70	72	84	76	78
7	63	31	53	130	120	124	75	72	73	81	78	79
8	28	22	24	129	---	126	77	74	75	83	80	80
9	38	29	33	---	---	---	79	74	75	85	81	82
10	41	36	38	---	---	---	80	74	76	85	82	83
11	42	37	39	---	---	---	81	74	78	85	82	83
12	46	41	43	---	---	---	81	76	79	86	82	84
13	59	45	51	123	---	99	83	77	80	86	81	83
14	67	58	62	99	82	89	83	77	80	86	80	83
15	70	63	66	166	99	110	82	77	80	86	80	83
16	71	47	64	124	108	118	83	77	80	86	81	84
17	50	41	45	123	107	117	84	77	81	86	83	84
18	61	50	55	129	---	125	83	77	80	85	81	83
19	74	61	67	---	---	---	84	78	81	85	82	83
20	83	73	78	130	---	114	84	79	82	85	80	82
21	89	82	85	100	94	97	87	79	82	83	80	82
22	94	87	90	96	91	93	86	80	83	84	81	82
23	96	89	92	98	93	95	85	80	82	83	61	77
24	84	23	40	95	88	90	85	81	83	40	16	20
25	44	22	31	90	84	86	85	74	81	29	21	25
26	61	44	53	83	76	79	84	78	81	31	27	28
27	65	34	45	79	70	74	85	80	82	33	27	30
28	58	43	50	75	63	67	85	79	82	35	29	32
29	67	58	62	66	63	64	84	81	82	33	23	29
30	74	66	69	68	64	66	85	81	83	28	22	24
31	85	73	78	---	---	---	86	81	83	35	30	33
MONTH	96	22	51	166	58	98	87	67	78	88	16	68

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	41	35	38	92	66	81	47	41	43	---	---	---
2	47	42	44	106	89	94	51	46	48	---	---	---
3	53	47	50	91	74	82	57	51	53	---	---	---
4	57	52	54	76	74	74	61	47	53	---	---	---
5	60	57	58	76	66	70	55	47	50	---	---	---
6	65	60	62	71	66	67	59	54	55	---	---	---
7	68	64	65	76	71	72	60	39	45	---	---	---
8	68	48	59	79	74	75	38	34	35	---	---	---
9	49	40	43	80	77	78	35	29	33	---	---	---
10	49	42	45	80	75	77	28	19	21	---	---	---
11	55	49	52	75	72	72	30	22	25	---	---	---
12	60	55	57	75	72	73	38	30	34	---	---	---
13	65	60	62	77	74	75	43	38	41	---	---	---
14	66	60	63	79	75	76	46	42	44	---	---	---
15	63	58	61	80	77	78	41	37	38	---	---	---
16	52	27	31	81	78	79	45	39	42	---	---	---
17	39	30	34	82	79	80	49	45	47	---	---	---
18	47	40	43	83	78	80	48	36	45	---	---	---
19	51	47	49	84	79	81	34	24	26	---	---	---
20	52	23	35	84	81	82	33	29	32	---	---	---
21	31	24	27	86	82	83	33	31	32	---	---	---
22	40	32	35	86	83	84	42	33	37	---	---	---
23	45	39	42	86	82	83	38	---	19	---	---	---
24	50	45	47	82	80	81	---	---	---	---	---	---
25	55	50	52	83	80	81	---	---	---	---	---	---
26	59	54	56	83	81	81	---	---	---	---	---	---
27	62	58	60	84	82	82	---	---	---	---	---	---
28	65	61	63	85	80	82	---	---	---	---	---	---
29	73	65	66	84	53	76	---	---	---	---	---	---
30	---	---	---	49	38	39	---	---	---	---	---	---
31	---	---	---	45	40	42	---	---	---			
MONTH	73	23	50	106	40	76	61	19	39			

16713000 WAILUKU RIVER AT HILO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	69	67	67	55	52	53	62	60	61
2	---	---	---	70	65	67	57	55	56	63	61	61
3	---	---	---	68	66	66	58	56	57	67	63	64
4	---	---	---	70	67	68	58	55	56	71	66	68
5	---	---	---	70	68	69	60	56	57	75	70	71
6	---	---	---	71	58	69	58	51	53	77	74	75
7	---	---	---	71	69	70	53	51	51	78	74	76
8	---	---	---	71	68	69	52	51	51	77	73	75
9	---	---	---	68	64	65	55	52	53	73	69	70
10	---	---	---	65	63	64	57	54	55	74	71	71
11	---	---	---	65	63	64	58	56	56	74	72	73
12	---	---	---	66	63	64	59	57	58	75	73	74
13	---	---	---	67	64	65	61	58	60	77	75	76
14	---	---	---	68	66	66	63	60	61	78	76	76
15	---	---	---	69	66	67	77	62	64	80	77	78
16	---	---	---	70	58	68	66	62	63	81	78	79
17	---	---	---	73	70	71	64	62	63	81	78	79
18	---	---	---	74	71	72	66	63	64	83	79	81
19	---	---	---	75	72	73	67	65	66	83	79	80
20	---	---	---	77	73	75	69	67	67	81	78	79
21	51	---	50	76	61	73	70	66	68	81	79	79
22	55	51	53	76	73	74	70	67	68	83	80	81
23	57	54	55	76	72	74	68	28	38	83	80	81
24	59	56	57	77	72	75	37	30	33	82	80	81
25	60	58	58	79	74	77	44	37	40	83	81	82
26	62	59	60	80	77	78	48	44	46	84	82	82
27	63	61	62	80	70	77	48	44	46	83	81	82
28	64	63	63	68	37	44	45	43	44	83	82	82
29	66	63	64	41	37	38	50	45	47	84	81	82
30	68	66	66	47	41	44	56	50	53	84	82	82
31	---	---	---	52	47	49	60	56	57	---	---	---
MONTH	68	51	59	80	37	67	77	28	55	84	60	76
YEAR	166	16	65									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.0	20.5	21.0	20.5	20.0	20.5	21.5	20.5	21.0	22.5	21.0	21.5
2	22.0	20.0	21.0	21.0	20.5	20.5	21.0	20.5	21.0	22.5	20.5	21.5
3	20.5	20.5	22.0	21.0	20.5	20.5	21.5	20.5	21.0	22.0	20.5	21.0
4	20.5	20.5	20.5	21.0	20.5	20.5	21.5	21.0	21.0	22.5	20.5	21.0
5	21.0	20.5	20.5	21.5	21.0	21.0	22.0	21.0	21.0	22.0	20.5	21.0
6	21.0	20.5	21.0	21.5	21.0	21.0	22.0	21.0	21.5	21.0	20.5	20.5
7	21.0	20.5	21.0	21.5	21.0	21.0	22.0	21.0	21.5	21.5	20.5	21.0
8	20.5	20.0	20.0	22.0	21.0	21.5	21.5	20.5	21.0	21.5	20.0	20.5
9	20.0	19.5	20.0	22.0	20.5	21.5	21.5	20.5	21.0	21.5	20.0	20.5
10	20.0	19.5	19.5	22.5	21.0	21.5	22.0	20.5	21.0	21.5	20.0	20.5
11	19.5	19.0	19.5	22.5	21.0	21.5	22.0	20.5	21.0	21.0	20.0	20.5
12	20.0	19.0	19.5	22.5	21.5	21.5	22.0	20.5	21.0	22.0	20.0	20.5
13	20.5	19.5	20.0	21.5	21.0	21.0	22.0	20.5	21.0	21.0	20.0	20.5
14	21.5	20.5	21.0	21.5	21.0	21.0	22.0	21.0	21.0	21.5	20.0	20.5
15	21.0	20.5	21.0	22.0	21.0	21.5	22.0	21.0	21.5	21.5	20.5	21.0
16	21.5	21.0	21.0	21.5	21.0	21.0	22.0	21.0	21.5	22.0	20.0	21.0
17	21.0	20.5	21.0	21.5	21.0	21.0	22.0	21.0	21.5	22.0	20.0	21.0
18	21.0	20.5	21.0	21.5	21.0	21.0	22.0	20.5	21.0	22.0	20.5	21.0
19	22.0	21.0	21.5	22.0	21.0	21.5	22.0	20.5	21.0	22.5	20.5	21.5
20	22.0	21.5	22.0	21.5	21.5	21.5	21.0	20.0	20.5	22.5	21.0	21.5
21	22.0	21.5	22.0	21.5	21.0	21.5	21.5	20.0	20.5	22.5	21.0	21.5
22	22.0	21.5	22.0	21.0	21.0	21.0	21.0	19.0	20.0	22.5	20.5	21.5
23	22.0	21.5	21.5	21.5	21.0	21.0	20.5	19.5	20.0	21.0	20.5	21.0
24	21.5	19.5	20.0	21.0	20.5	20.5	21.0	19.5	20.0	19.5	18.0	18.5
25	20.0	19.0	19.5	21.0	20.5	20.5	21.0	19.5	20.0	19.5	18.5	19.0
26	20.5	20.0	20.5	20.5	20.5	20.5	21.5	20.5	21.0	19.5	19.0	19.5
27	20.5	19.5	20.0	20.5	20.0	20.5	22.0	20.5	21.0	20.0	19.0	19.5
28	19.5	19.0	19.5	21.0	20.5	20.5	22.5	21.0	21.5	19.5	19.0	19.5
29	20.0	19.5	19.5	21.0	20.5	20.5	22.5	21.5	22.0	19.0	18.5	19.0
30	20.0	19.5	20.0	21.5	20.5	21.0	22.5	21.0	21.5	19.5	18.5	19.0
31	20.5	19.5	20.0	---	---	---	22.5	21.0	21.5	20.0	19.0	19.5
MONTH	22.0	19.0	19.5	22.5	20.0	21.0	22.5	19.0	21.0	22.5	18.0	20.5

16713000 WAILUKU RIVER AT HILO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	20.0	19.0	19.5	21.0	20.0	20.5	22.0	21.0	21.5	---	---	---
2	20.0	19.5	20.0	21.5	20.0	21.0	22.5	21.5	21.5	---	---	---
3	20.0	20.0	20.0	21.0	20.5	21.0	23.5	21.0	22.0	---	---	---
4	20.0	19.5	20.0	22.0	20.5	21.0	22.0	21.0	21.5	---	---	---
5	20.5	19.5	20.0	21.5	21.0	21.0	22.0	21.0	21.0	---	---	---
6	20.5	19.5	20.0	22.5	21.0	21.5	22.0	20.5	21.0	---	---	---
7	20.5	20.0	20.0	22.5	21.0	21.5	21.0	20.5	20.5	---	---	---
8	20.5	19.0	20.0	23.5	21.0	22.0	20.5	20.0	20.0	---	---	---
9	19.5	19.0	19.0	23.0	21.0	22.0	20.0	19.5	19.5	---	---	---
10	20.0	19.0	19.5	22.0	21.5	21.5	19.0	18.0	18.5	---	---	---
11	20.0	19.0	19.5	22.5	21.0	21.5	20.0	18.5	19.0	---	---	---
12	20.0	20.0	20.0	22.5	21.0	21.5	20.5	19.5	20.0	---	---	---
13	21.0	20.0	20.0	22.5	20.5	21.5	21.0	20.5	21.0	---	---	---
14	21.0	20.5	20.5	22.0	21.0	21.5	21.0	20.0	20.0	---	---	---
15	20.5	20.0	20.5	22.5	21.0	21.5	20.0	19.5	19.5	---	---	---
16	20.0	19.0	19.5	23.0	21.0	22.0	20.0	19.5	20.0	---	---	---
17	20.0	19.5	20.0	23.5	21.5	22.5	20.0	19.5	20.0	---	---	---
18	20.5	19.5	20.0	23.0	21.5	22.0	20.0	19.5	19.5	---	---	---
19	21.0	20.0	20.5	24.0	21.5	22.5	19.5	18.5	19.5	---	---	---
20	21.0	19.5	20.0	24.0	21.5	22.5	20.5	19.5	20.0	---	---	---
21	19.5	19.0	19.5	23.5	21.5	22.0	20.5	19.5	20.0	---	---	---
22	19.5	19.0	19.5	22.5	21.5	22.0	20.5	19.5	20.0	---	---	---
23	20.0	19.5	19.5	23.0	21.5	22.0	20.5	---	17.0	---	---	---
24	20.0	19.5	20.0	23.0	21.5	22.0	---	---	---	---	---	---
25	20.5	19.5	20.0	23.0	21.5	22.0	---	---	---	---	---	---
26	20.5	20.0	20.0	23.0	21.5	22.0	---	---	---	---	---	---
27	20.5	20.0	20.0	23.5	21.5	22.5	---	---	---	---	---	---
28	21.0	20.0	20.0	24.0	21.5	22.5	---	---	---	---	---	---
29	21.0	20.0	20.5	22.5	21.0	22.0	---	---	---	---	---	---
30	---	---	---	21.0	20.0	20.5	---	---	---	---	---	---
31	---	---	---	21.5	20.5	21.0	---	---	---	---	---	---
MONTH	21.0	19.0	20.0	24.0	20.0	21.5	23.5	18.0	20.0			

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	23.0	22.0	22.5	24.0	22.5	23.0	22.5	22.0	22.0
2	---	---	---	23.5	22.5	23.0	23.5	22.5	23.0	23.5	22.0	22.5
3	---	---	---	24.0	22.5	23.0	23.5	22.5	23.0	24.0	22.0	23.0
4	---	---	---	24.0	22.5	23.0	24.0	22.5	23.0	24.5	22.0	23.0
5	---	---	---	23.5	22.5	23.0	23.5	23.0	23.5	24.5	22.5	23.0
6	---	---	---	24.0	22.5	23.0	23.0	22.5	23.0	24.5	22.5	23.5
7	---	---	---	25.0	23.0	23.5	23.0	22.0	22.5	25.0	22.5	23.5
8	---	---	---	24.5	23.5	23.5	23.0	22.0	22.0	24.0	22.5	23.5
9	---	---	---	23.5	23.0	23.5	23.0	22.0	22.5	24.0	23.0	23.5
10	---	---	---	23.0	22.5	22.5	23.0	22.0	22.5	24.0	22.5	23.5
11	---	---	---	23.5	22.5	23.0	23.0	22.0	22.5	24.5	22.5	23.5
12	---	---	---	24.0	22.5	23.0	23.0	22.5	22.5	24.5	22.5	23.0
13	---	---	---	25.0	23.0	23.5	23.5	22.5	22.5	24.5	22.5	23.5
14	---	---	---	25.0	23.0	24.0	24.0	22.5	23.0	24.5	22.5	23.0
15	---	---	---	25.0	23.0	23.5	23.5	22.5	23.0	24.0	22.5	23.0
16	---	---	---	25.0	23.0	23.5	22.5	22.5	22.5	25.0	22.0	23.0
17	---	---	---	25.0	23.0	23.5	23.5	22.5	23.0	24.5	22.0	23.0
18	---	---	---	25.5	22.5	24.0	24.0	22.5	23.0	24.5	22.0	23.0
19	---	---	---	25.5	23.0	24.0	23.5	22.5	23.0	24.5	22.5	23.5
20	---	---	---	24.0	22.5	23.5	23.0	22.5	22.5	24.5	22.5	23.5
21	21.5	---	23.0	24.0	23.0	23.5	23.5	22.5	23.0	24.0	23.0	23.0
22	22.0	21.0	21.5	25.0	23.0	23.5	24.0	22.5	23.0	24.5	22.5	23.5
23	22.0	21.5	21.5	25.0	23.0	24.0	23.0	21.0	21.5	24.5	22.5	23.5
24	22.0	21.5	22.0	25.0	23.0	24.0	21.5	21.0	21.0	23.5	22.5	23.0
25	22.0	21.5	22.0	25.0	22.5	23.5	21.5	21.0	21.5	24.0	22.5	23.0
26	22.5	21.5	22.0	24.0	23.0	23.5	22.0	21.5	21.5	24.0	22.5	23.0
27	23.0	22.0	22.5	23.0	22.5	23.0	22.0	21.5	21.5	24.0	22.5	23.0
28	23.0	22.0	22.5	22.5	21.5	21.5	22.0	21.0	21.5	24.5	22.5	23.5
29	23.5	22.0	22.5	22.5	21.5	22.0	22.5	21.0	22.0	23.5	23.0	23.0
30	24.0	22.0	22.5	23.0	22.0	22.5	23.0	22.0	22.0	23.5	22.5	23.0
31	---	---	---	24.0	22.5	23.0	22.5	22.0	22.5	---	---	---
MONTH	24.0	21.0	22.0	25.5	21.5	23.0	24.0	21.0	22.5	25.0	22.0	23.5
YEAR	25.5	18.0	21.5									

16713000 WAILUKU RIVER AT HILO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), OCTOBER TO DECEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	950	2	5.1	214	2	1.2	44	4	.48
2	875	2	4.7	171	1	.46	42	5	.57
3	600	2	3.2	131	1	.35	45	5	.61
4	484	2	2.6	99	1	.27	47	5	.63
5	470	2	2.5	81	1	.22	49	4	.53
6	358	2	1.9	63	1	.17	31	4	.33
7	782	20	42	49	1	.13	28	3	.23
8	1900	10	51	38	1	.10	24	3	.19
9	930	4	10	32	1	.09	22	3	.18
10	920	8	20	28	1	.08	19	2	.10
11	684	3	5.5	30	1	.08	18	2	.10
12	548	2	3.0	30	2	.16	18	2	.10
13	470	2	2.5	413	5	5.6	21	2	.11
14	331	2	1.8	79	2	.43	20	2	.11
15	278	2	1.5	38	1	.10	20	2	.11
16	681	5	9.2	52	3	.42	19	1	.05
17	580	3	4.7	69	2	.37	18	1	.05
18	355	2	1.9	58	2	.31	17	1	.05
19	255	2	1.4	130	2	.70	16	1	.04
20	210	2	1.1	316	3	2.6	14	1	.04
21	196	1	.53	158	3	1.3	13	1	.04
22	153	1	.41	111	2	.60	16	2	.09
23	193	3	1.6	98	2	.53	20	2	.11
24	1640	29	141	95	2	.51	20	2	141
25	1200	12	39	75	1	.20	24	6	.39
26	540	4	5.8	105	1	.28	23	4	.25
27	1420	18	69	79	1	.21	19	3	.15
28	740	4	8.0	59	2	.32	22	4	.24
29	505	3	4.1	53	1	.14	28	4	.30
30	370	2	2.0	45	3	.36	18	3	.15
31	275	2	1.5	---	---	---	16	2	.09
TOTAL	19893	---	448.54	2999	---	18.29	751	---	147.42

16717000 HONOLII STREAM NEAR PAPAIKOU
(Hydrologic bench-mark station)

LOCATION.--Lat 19°46'00", long 155°09'16", Hydrologic Unit 20010000, on left bank 0.7 mi downstream from Pohakupaa Stream, 4.1 mi west of Papaikou, and 4.8 mi northwest of Hilo Post Office.

DRAINAGE AREA.--11.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1911 to March 1913 (published as "at Kaiwiki, near Hilo"), February 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,540 ft, from topographic map. Prior to Aug. 27, 1911, nonrecording gage and Aug. 27, 1911, to Mar. 24, 1913, water-stage recorder, at site 0.5 mi upstream at different datum.

REMARKS.--Records good. No diversion above station. During period 1911-13, Honolii ditch diverted an average of about 3.2 ft³/s above station for fluming cane and domestic use.

AVERAGE DISCHARGE.--18 years, 123 ft³/s (89,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,600 ft³/s May 23, 1978, gage height, 20.00 ft, from floodmarks and from rating curve extended above 4,610 ft³/s on basis of slope-area measurement at gage height 20.00 ft; minimum, 0.8 ft³/s Jan. 31, 1912.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,730 ft³/s Oct. 24, gage height, 12.14 ft, no other peak above base of 4,400 ft³/s; minimum, 6.8 ft³/s Jan. 4, 5, 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	171	45	14	7.5	56	23	71	58	18	15	28	32
2	145	40	14	7.3	43	18	50	95	16	40	40	28
3	86	37	15	7.0	32	17	38	58	15	19	49	20
4	73	32	16	6.9	27	20	93	41	15	16	29	17
5	83	32	20	23	23	32	38	34	15	18	57	15
6	69	29	14	120	20	18	75	32	17	14	69	14
7	442	25	13	26	18	16	207	30	16	13	38	13
8	724	23	11	15	214	14	199	32	15	55	25	12
9	145	20	11	12	104	13	352	26	14	58	20	11
10	136	20	10	13	50	12	783	23	13	33	23	13
11	110	18	10	9.4	31	11	292	23	15	20	26	12
12	86	47	9.7	8.3	23	10	82	20	30	18	34	10
13	76	161	9.7	9.0	20	9.9	54	18	41	19	33	9.5
14	63	40	9.4	16	43	9.7	211	16	31	16	20	8.9
15	59	25	9.4	12	122	9.9	161	15	32	14	23	8.7
16	279	20	9.3	10	253	9.6	70	17	157	14	45	8.6
17	141	20	9.3	9.2	51	9.0	88	17	177	15	26	8.3
18	71	17	9.3	8.2	34	8.7	299	50	54	13	18	8.0
19	56	71	9.1	7.5	41	8.4	551	29	39	12	17	7.8
20	53	110	8.4	7.3	401	8.3	204	61	34	12	17	7.9
21	64	45	8.1	7.0	174	8.1	197	67	34	31	16	8.6
22	55	30	8.0	6.8	69	7.9	182	38	28	15	56	7.8
23	123	30	7.8	338	50	7.7	646	79	23	12	389	7.4
24	870	25	7.5	723	41	7.5	356	94	26	13	91	8.7
25	263	20	8.0	73	31	7.3	153	42	27	14	48	9.1
26	93	26	8.7	125	27	7.4	108	48	20	27	60	8.1
27	597	20	12	68	26	7.7	68	31	23	152	106	7.6
28	116	17	10	219	22	13	57	23	22	147	53	7.1
29	84	15	9.2	301	34	274	163	31	16	34	34	7.3
30	63	15	8.1	212	---	124	86	32	15	23	27	7.4
31	53	---	7.7	126	---	60	---	23	---	27	23	---
TOTAL	5449	1075	326.7	2533.4	2080	802.1	5934	1203	998	929	1540	343.8
MEAN	176	35.8	10.5	81.7	71.7	25.9	198	38.8	33.3	30.0	49.7	11.5
MAX	870	161	20	723	401	274	783	95	177	152	389	32
MIN	53	15	7.5	6.8	18	7.3	38	15	13	12	16	7.1
AC-FT	10810	2130	648	5020	4130	1590	11770	2390	1980	1840	3050	682

CAL YR 1983 TOTAL 27393.5 MEAN 75.1 MAX 1340 MIN 6.1 AC-FT 54340
WTR YR 1984 TOTAL 23214.0 MEAN 63.4 MAX 870 MIN 6.8 AC-FT 46040

16717000 HONOLII STREAM NEAR PAPAIKOU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 24...	1230	724	248	18	6.5	18.0	5.0	9.0	100	140	520
DEC 20...	0815	724	8.1	96	7.0	17.5	.30	9.1	100	5	94
JAN 10...	0945	--	14	62	7.1	18.5	--	--	--	--	--
FEB 27...	1200	724	23	48	7.0	19.0	1.4	8.8	100	6	47
APR 24...	0845	724	690	13	6.8	18.0	4.2	9.0	100	230	3000
JUL 10...	1000	725	32	36	7.1	18.5	2.9	8.5	95	560	540
AUG 20...	1030	724	17	57	7.7	19.5	1.4	8.6	99	K1800	43

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 24...	6	0	1.1	.67	1.6	37	.3	.30	6.0	--	2.9
DEC 20...	--	--	--	4.9	4.2	--	--	.40	35	1.3	3.5
FEB 27...	19	0	4.0	2.3	2.9	24	.3	.40	21	3.2	3.0
APR 24...	4	2	.81	.52	1.4	41	.3	.20	2.0	6.3	2.2
JUL 10...	14	1	3.1	1.6	2.2	24	.3	.40	13	5.0	2.9
AUG 20...	25	2	5.4	2.7	3.1	21	.3	.30	23	3.4	4.0

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT 24...	<.10	2.6	19	--	.03	<.10	.070	.90	.020	.020	.010
DEC 20...	<.10	24	61	--	.08	<.10	<.010	<.20	.030	<.010	--
FEB 27...	<.10	11	32	40	.04	<.10	.020	.20	.010	<.010	.030
APR 24...	<.10	2.1	--	15	.02	<.10	.020	.30	.020	.010	.030
JUL 10...	<.10	7.6	--	31	.04	<.10	.030	.40	.010	.010	.020
AUG 20...	<.10	13	43	46	.06	<.10	<.010	<.20	<.010	.030	.030

< Actual value is known to be less than the value shown.

16717000 HONOLII STREAM NEAR PAPAIKOU--Continued

WATER QUALITY DATA, WATFR YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)
DEC 20...	20	<1	5	.8	<1	<1	<3	2	15	<1	<4
APR 24...	130	<1	5	2	<1	2	<3	2	230	<1	<4

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
DEC 20...	1	<.1	<10	<1	<1	<1	59	<6	4
APR 24...	6	<.1	<10	<1	<1	<1	6	<6	11

DATE	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L)	URANIUM DISSOLVED, EXTRACTION (UG/L)
JAN 10...	<1.0	<.5	.7	<.6	.6	<.6	.06	<.01

DATE	TIME	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 24...	1230	6	4.0	100
DEC 20...	0815	0	.00	100
FEB 27...	1200	0	.00	100
APR 24...	0845	6	11	100
JUL 10...	1000	3	.26	100
AUG 20...	1030	1	.05	100

< Actual value is known to be less than the value shown.

16720000 KAWAINUI STREAM NEAR KAMUELA

LOCATION.--Lat 20°05'18", long 155°40'58", Hydrologic Unit 20010000, on left bank 250 ft upstream from Upper Hamakua ditch intake and 4.5 mi north of Kamuela.

DRAINAGE AREA.--1.58 mi^2.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,060 ft, from topographic map.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 14.6 ft^3/s (10,580 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,150 ft^3/s Nov. 18, 1979, gage height, 10.03 ft, from rating curve extended above 53 ft^3/s on basis of computations of peak flow over dam and slope-area measurement at gage height 10.03 ft; minimum, 0.01 ft^3/s Jan. 20, 21, 24-28, Feb. 20-22, 1977, Dec. 16-20, 1977, Feb. 23, 24, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 440 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 24	1830	577	5.49
Dec. 26	0900	*1150	7.04

Minimum discharge, 0.22 ft^3/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	5.5	1.2	1.2	5.7	1.2	4.8	3.4	2.0	17	2.8	7.8
2	12	33	1.0	.94	22	16	3.0	6.2	1.5	18	2.3	4.2
3	4.3	15	.87	.75	36	17	6.5	7.4	1.3	3.5	1.9	2.2
4	3.4	9.7	.73	.62	6.8	27	50	5.4	1.2	4.6	4.5	1.6
5	3.5	38	.62	37	2.8	3.6	5.1	2.8	2.4	20	50	1.3
6	5.5	6.3	.58	25	1.9	2.1	78	2.0	3.0	4.5	19	1.1
7	53	3.2	.58	5.4	1.6	1.6	53	1.6	2.3	2.7	4.6	.94
8	76	2.5	.73	4.5	47	1.2	40	1.4	9.3	3.6	2.4	.75
9	16	2.0	.98	2.3	13	1.0	19	1.2	15	5.4	1.8	.88
10	35	1.7	.74	1.6	4.9	.78	61	1.3	21	3.2	15	1.9
11	9.5	1.5	2.0	1.2	2.5	.62	37	1.7	9.9	2.1	8.7	1.4
12	5.3	34	1.1	2.0	1.8	.51	8.9	2.3	21	2.3	25	.97
13	3.8	38	.80	22	1.9	.68	9.8	1.4	36	22	11	.71
14	10	7.3	.78	5.4	16	1.4	99	1.2	8.6	3.6	4.1	.63
15	29	4.9	1.3	9.2	43	1.4	36	1.5	7.6	2.3	4.2	.58
16	139	2.8	4.4	3.1	25	3.5	35	2.5	14	2.0	7.6	.46
17	19	2.2	2.0	1.9	6.7	2.3	104	26	22	1.7	3.0	.41
18	5.8	1.8	1.2	1.4	3.7	1.5	61	28	4.7	1.4	1.9	.36
19	25	1.5	.91	1.1	28	1.2	26	9.0	3.4	1.2	1.5	.32
20	7.8	1.3	.71	.83	66	1.2	9.6	27	3.6	1.7	1.2	.33
21	6.1	1.1	.57	.65	27	.94	12	18	7.6	1.4	1.1	.30
22	5.3	1.0	.49	.51	7.3	2.4	14	8.9	15	1.1	12	.28
23	14	2.1	.43	.43	16	6.3	25	13	15	.94	21	.24
24	106	3.7	.39	.57	13	3.4	7.8	31	26	1.2	6.3	.33
25	26	8.7	6.3	1.0	4.6	4.4	3.5	9.3	9.7	1.1	3.3	.33
26	33	9.0	263	4.3	4.1	11	2.5	9.5	4.5	.89	19	.29
27	127	2.6	29	2.6	2.4	19	2.0	3.1	15	19	41	.27
28	14	1.8	6.2	20	1.8	41	2.4	2.3	6.3	21	6.6	.27
29	12	1.4	2.7	103	1.4	65	37	9.3	3.0	3.8	3.0	.24
30	9.1	1.3	1.9	39	---	22	8.6	7.4	4.7	2.4	2.0	.23
31	7.4	---	1.4	54	---	15	---	2.9	---	5.2	6.4	---
TOTAL	844.8	244.9	335.61	353.50	413.9	276.23	861.5	248.0	296.6	180.83	294.2	31.62
MEAN	27.3	8.16	10.8	11.4	14.3	8.91	28.7	8.00	9.89	5.83	9.49	1.05
MAX	139	38	263	103	66	65	104	31	36	22	50	7.8
MIN	3.4	1.0	.39	.43	1.4	.51	2.0	1.2	1.2	.89	1.1	.23
AC-FT	1680	486	666	701	821	548	1710	492	588	359	584	63

CAL YR 1983	TOTAL	5368.40	MEAN	14.7	MAX	263	MIN	.07	AC-FT	10650
WTR YR 1984	TOTAL	4381.69	MEAN	12.0	MAX	263	MIN	.23	AC-FT	8690

16720300 KAWAIKI STREAM NEAR KAMUELA

LOCATION.--Lat 20°05'13", long 155°40'59", Hydrologic Unit 20010000, on right bank 0.2 mi upstream from Upper Hamakua ditch intake and 4.4 mi north of Kamuela.

DRAINAGE AREA.--0.45 mi².

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR HI-80-1: 1969-79(P).

GAGE.--Water-stage recorder. Altitude of gage is 4,090 ft, from topographic map.

REMARKS.--Records good. No diversion above station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 4.23 ft³/s (3,060 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,470 ft³/s Nov. 18, 1979, gage height, 8.32 ft, from rating curve extended above 33 ft³/s on basis of slope-area measurement at gage height 8.32 ft; minimum, 0.01 ft³/s Mar. 10-15, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 16	1000	109	2.77	Dec. 26	0900	*300	4.25
Oct. 24	1830	169	3.39	Jan. 29	1900	135	3.05

Minimum discharge, 0.04 ft³/s Dec. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	2.0	.22	.16	1.2	.22	1.0	.77	.46	6.7	.91	3.1
2	3.6	8.5	.19	.14	3.5	5.6	.50	1.9	.35	5.6	.70	1.6
3	1.8	3.8	.18	.11	6.2	4.0	1.6	3.4	.30	1.1	.42	.56
4	1.6	3.2	.17	.10	2.9	5.1	11	2.0	.31	2.0	2.8	.38
5	1.6	9.4	.15	11	.53	.65	1.1	.82	1.0	6.1	17	.30
6	1.8	1.6	.14	5.5	.33	.32	18	.53	1.0	1.6	5.2	.25
7	13	.75	.14	1.5	.28	.24	12	.41	.86	.89	1.3	.23
8	19	.56	.22	2.0	11	.19	9.4	.36	3.7	2.5	.49	.21
9	4.3	.45	.18	.41	4.2	.16	4.1	.35	4.6	3.6	.33	.26
10	9.1	.40	.22	.24	1.4	.15	12	.39	6.3	1.5	3.5	.45
11	2.9	.38	.90	.18	.51	.13	7.3	1.2	3.8	.67	3.0	.30
12	1.7	11	.23	.62	.34	.11	2.4	1.0	6.8	1.0	9.7	.21
13	1.1	9.4	.16	6.7	.72	.17	2.8	.46	9.4	7.3	3.5	.18
14	3.0	2.1	.19	1.4	4.2	.21	26	.38	2.8	1.1	1.1	.20
15	7.8	1.8	.34	3.6	9.9	.29	8.5	.51	2.9	.54	1.6	.19
16	34	.81	1.6	.61	5.1	.95	10	.93	5.4	.47	3.4	.17
17	4.9	.54	.32	.29	2.0	.40	24	8.5	5.1	.38	.92	.15
18	1.8	.39	.18	.20	.74	.21	13	7.5	1.4	.29	.42	.14
19	5.2	.34	.14	.16	8.3	.17	5.4	3.9	1.1	.27	.32	.13
20	2.4	.30	.12	.13	16	.16	3.1	7.0	1.0	.32	.25	.13
21	2.0	.26	.10	.12	6.0	.13	3.1	4.5	2.0	.26	.27	.11
22	1.4	.23	.08	.11	1.6	1.0	3.7	2.6	4.0	.22	3.2	.09
23	3.3	.76	.06	.09	3.2	1.5	6.2	4.5	5.1	.21	5.6	.09
24	26	1.2	.05	.09	2.4	.62	2.4	7.0	6.9	.30	2.1	.11
25	6.0	2.7	1.6	.18	1.4	.72	.88	2.8	3.0	.23	.99	.13
26	9.0	2.3	62	.39	1.3	3.7	.55	3.1	1.4	.19	6.0	.11
27	32	.51	5.4	.22	.52	5.6	.48	.88	4.8	5.0	11	.09
28	4.1	.32	1.2	4.1	.34	11	.62	.67	2.0	5.1	2.0	.09
29	3.6	.24	.42	28	.26	15	6.1	4.4	.80	1.1	.78	.09
30	3.4	.25	.26	9.8	---	5.4	1.8	2.4	1.6	.58	.43	.09
31	2.0	---	.19	12	---	4.4	---	.76	---	2.2	2.3	---
TOTAL	220.2	66.49	77.35	90.15	96.37	68.50	199.03	75.92	90.18	59.32	91.53	10.14
MEAN	7.10	2.22	2.50	2.91	3.32	2.21	6.63	2.45	3.01	1.91	2.95	.34
MAX	34	11	62	28	16	15	26	8.5	9.4	7.3	17	3.1
MIN	1.1	.23	.05	.09	.26	.11	.48	.35	.30	.19	.25	.09
AC-FT	437	132	153	179	191	136	395	151	179	118	182	20

CAL YR 1983 TOTAL 1527.93 MEAN 4.19 MAX 62 MIN .01 AC-FT 3030
WTR YR 1984 TOTAL 1145.18 MEAN 3.13 MAX 62 MIN .05 AC-FT 2270

16720500 UPPER HAMAKUA DITCH BELOW KAWAIKI STREAM, NEAR KAMUELA

LOCATION.--Lat 20°05'15", long 155°40'42", Hydrologic Unit 20010000, on right bank 800 ft downstream from Kawaiki Stream intake and 4.4 mi north of Kamuela.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,020 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from Kawainui and Kawaiki Streams for irrigation in vicinity of Kamuela. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 7.04 ft³/s (5,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 49 ft³/s Nov. 2, 1967; no flow Nov. 18, 1979 to Oct. 23, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 17 ft³/s Aug. 5, 27; minimum daily, 0.24 ft³/s Sept. 23, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	6.8	.94	1.0	5.3	1.3	4.1	3.2	2.0	4.0	3.4	10
2	9.5	9.0	.78	.78	4.4	2.1	3.5	3.4	1.4	4.0	2.7	5.4
3	5.6	9.2	.72	.67	5.2	4.0	3.5	3.5	1.2	3.5	1.9	2.4
4	4.8	7.1	.62	.62	4.7	4.6	4.8	3.4	1.0	3.1	5.3	1.5
5	5.0	9.6	.56	1.9	3.9	4.0	3.9	2.9	2.5	3.9	17	1.2
6	6.6	6.6	.56	5.6	2.5	2.4	5.6	1.9	3.5	3.5	16	.84
7	11	4.0	.56	4.7	1.8	1.6	5.2	1.4	2.9	2.9	5.6	.72
8	12	3.1	.62	4.4	4.0	1.3	4.6	1.1	3.1	3.5	2.5	.62
9	9.9	2.5	.89	3.0	5.8	.89	4.1	.94	4.1	3.6	1.6	.78
10	11	2.0	.72	1.7	5.2	.78	4.8	1.1	4.3	3.4	10	1.8
11	9.5	1.6	2.9	1.3	3.8	.67	4.6	1.8	4.1	2.3	11	1.2
12	6.6	9.3	1.2	1.1	2.5	.62	4.0	2.6	4.6	2.5	12	.78
13	5.0	9.6	.72	4.7	2.0	.72	4.1	1.4	4.0	4.0	12	.62
14	7.1	7.7	.78	4.4	3.5	1.4	6.6	1.0	3.5	3.5	5.2	.62
15	11	6.2	1.4	4.1	5.5	1.5	4.8	1.5	3.5	2.4	5.3	.56
16	13	3.6	4.7	3.8	4.7	3.6	5.0	3.0	3.8	1.9	10	.45
17	9.9	2.7	2.1	2.4	4.3	2.9	6.2	4.4	3.8	1.6	3.8	.45
18	6.6	1.9	1.0	1.5	4.1	1.4	5.3	4.3	3.5	1.2	2.0	.38
19	11	1.5	.72	1.1	4.8	1.0	4.4	3.9	3.4	1.0	1.4	.31
20	8.8	1.4	.62	.89	5.2	.94	4.1	4.1	3.2	1.4	1.1	.31
21	7.4	1.2	.45	.78	4.4	.78	4.1	3.9	3.6	1.3	1.2	.28
22	6.4	.89	.42	.67	4.0	1.3	4.3	3.8	3.6	.89	5.8	.28
23	8.4	2.4	.34	.56	4.0	4.0	4.6	3.9	3.8	.72	14	.24
24	12	4.1	.31	.67	4.1	3.1	4.1	4.1	3.9	1.0	8.2	.28
25	9.7	5.2	1.0	.67	4.0	3.8	3.9	3.9	3.6	.89	3.9	.31
26	10	7.0	10	3.4	3.9	4.1	3.0	4.0	3.5	.72	11	.28
27	11	3.0	5.9	2.9	3.1	4.4	2.0	3.5	3.8	1.8	17	.28
28	9.3	1.8	5.3	3.8	2.1	5.2	1.9	2.7	3.6	5.0	8.2	.28
29	8.9	1.3	3.4	5.5	1.6	5.8	3.8	3.9	3.2	4.1	3.5	.24
30	8.3	1.2	1.9	7.3	---	4.6	3.5	3.8	2.9	2.6	1.5	.24
31	7.8	---	1.4	6.5	---	4.4	---	3.1	---	6.7	6.0	---
TOTAL	274.1	133.49	53.53	82.41	114.4	79.20	128.4	91.44	98.9	82.92	210.1	33.65
MEAN	8.84	4.45	1.73	2.66	3.94	2.55	4.28	2.95	3.30	2.67	6.78	1.12
MAX	13	9.6	10	7.3	5.8	5.8	6.6	4.4	4.6	6.7	17	10
MIN	4.8	.89	.31	.56	1.6	.62	1.9	.94	1.0	.72	1.1	.24
AC-FT	544	265	106	163	227	157	255	181	196	164	417	67

CAL YR 1983 TOTAL 2245.76 MEAN 6.15 MAX 14 MIN .04 AC-FT 4450
WTR YR 1984 TOTAL 1382.54 MEAN 3.78 MAX 17 MIN .24 AC-FT 2740

16724800 UPPER HAMAKUA DITCH ABOVE ALAKAHI STREAM, NEAR KAMUELA

LOCATION.--Lat 20°04'31", long 155°40'26", Hydrologic Unit 20010000, on right bank 0.1 mi upstream from Alakahi Stream and 3.6 mi north of Kamuela.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,890 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from Kawainui and Kawaiki Streams for irrigation in vicinity of Kamuela. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 5.13 ft^3/s (3,720 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 41 ft^3/s Aug. 18, 1972; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 18 ft^3/s Oct. 16; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.1	.22	.08	2.7	.08	1.9	1.9	.71	1.8	1.3	4.5
2	8.4	9.1	.11	.00	2.5	.63	1.4	2.0	.36	1.8	.90	2.6
3	4.2	8.9	.03	.00	3.2	1.5	1.3	2.2	.22	1.4	.46	.91
4	3.4	6.3	.00	.00	2.4	1.9	2.6	2.1	.15	1.2	1.3	.40
5	3.5	9.6	.00	2.2	1.6	1.5	1.7	1.6	.55	1.7	8.7	.21
6	5.0	6.1	.00	2.7	.74	.69	3.6	.99	1.1	1.4	7.7	.10
7	10	3.5	.00	2.2	.41	.26	3.4	.61	.94	1.1	3.0	.02
8	14	2.4	.01	2.0	3.7	.06	2.9	.36	1.3	1.5	1.1	.00
9	9.6	1.9	.01	.94	2.8	.00	2.2	.25	1.7	1.4	.48	.00
10	11	1.4	.00	.34	2.4	.00	2.9	.28	1.8	1.2	3.9	.20
11	8.9	1.0	.67	.09	1.2	.00	2.6	.75	1.7	.62	4.9	.10
12	5.8	8.0	.07	.16	.57	.00	2.2	1.1	2.0	.64	5.6	.00
13	4.2	9.4	.00	2.0	.53	.00	2.2	.44	2.2	1.6	6.0	.00
14	5.0	5.8	.00	1.7	2.3	.00	6.8	.23	1.7	1.2	2.6	.00
15	10	4.7	.06	1.6	2.9	.01	3.4	.34	1.6	.81	2.4	.00
16	18	2.5	1.9	1.3	2.3	.56	3.8	.89	1.8	.54	5.0	.00
17	11	1.8	.66	.52	1.9	.42	5.6	2.0	1.8	.34	1.8	.00
18	6.1	1.1	.11	.17	1.7	.02	4.5	2.5	1.5	.16	.71	.00
19	11	.70	.00	.01	2.6	.00	3.1	1.9	1.4	.05	.36	.00
20	7.9	.45	.00	.00	3.4	.00	2.7	2.2	1.3	.19	.19	.00
21	6.3	.26	.00	.00	2.3	.00	2.6	2.1	1.4	.13	.14	.00
22	5.3	.16	.00	.00	1.8	.02	2.6	1.9	1.5	.00	2.0	.00
23	5.8	.99	.00	.00	1.8	.73	3.1	2.0	1.8	.00	6.1	.00
24	14	2.0	.00	.00	1.8	.48	2.5	2.3	1.8	.00	3.6	.00
25	11	2.8	.33	.00	1.7	.87	2.2	2.0	1.6	.00	1.8	.00
26	12	4.5	13	.66	1.7	1.2	1.5	2.0	1.4	.00	4.3	.00
27	17	1.7	4.3	.41	1.1	1.6	1.0	1.6	1.6	.21	8.0	.00
28	11	.86	3.4	.96	.54	2.3	.97	1.1	1.3	1.5	4.1	.00
29	10	.47	1.6	6.5	.24	3.2	2.2	1.8	1.3	1.3	1.7	.00
30	8.4	.38	.70	4.5	---	2.4	2.1	1.8	1.0	.67	.76	.00
31	7.2	---	.27	4.5	---	2.2	---	1.4	---	2.1	2.0	---
TOTAL	275.0	104.87	27.45	35.54	54.83	22.63	81.57	44.64	40.53	26.56	92.90	9.04
MEAN	8.87	3.50	.89	1.15	1.89	.73	2.72	1.44	1.35	.86	3.00	.30
MAX	18	9.6	13	6.5	3.7	3.2	6.8	2.5	2.2	2.1	8.7	4.5
MIN	3.4	.16	.00	.00	.24	.00	.97	.23	.15	.00	.14	.00
AC-FT	545	208	54	70	109	45	162	89	80	53	184	18

CAL YR 1983 TOTAL 2084.66 MEAN 5.71 MAX 19 MIN .00 AC-FT 4130
WTR YR 1984 TOTAL 815.56 MEAN 2.23 MAX 18 MIN .00 AC-FT 1620

16725000 ALAKAHI STREAM NEAR KAMUELA

LOCATION.--Lat 20°04'27", long 155°40'25", Hydrologic Unit 20010000, on right bank 25 ft upstream from upper Hamakua ditch intake and 3.5 mi north of Kamuela.

DRAINAGE AREA.--0.87 mi^2.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,900 ft, from topographic map.

REMARKS.--Records good. Parker Ranch pipeline diverts from tributary 0.4 mi above station for ranch use in Kamuela area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 6.81 ft^3/s (4,930 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft^3/s Nov. 18, 1979, gage height, 9.90 ft, from rating curve extended above 28 ft^3/s on basis of computations of peak flow over dam and slope-area measurement at gage height 9.90 ft; minimum, 0.03 ft^3/s on several days in 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 120 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 16	0930	187	4.98	Dec. 26	0900	*487	6.49
Oct. 24	1800	202	5.08	Jan. 29	1930	177	4.91
Oct. 27	0130	123	4.44				

Minimum discharge, 0.31 ft^3/s Sept. 21-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	3.8	1.1	1.2	3.7	1.2	3.4	2.6	2.0	7.8	1.8	4.0
2	6.7	14	1.0	.99	4.7	7.8	2.6	3.0	1.6	6.8	1.3	2.9
3	3.7	6.1	.97	.89	10	6.7	2.1	4.3	1.4	2.4	.92	1.5
4	3.2	5.2	.89	.82	4.0	8.0	14	3.8	1.0	2.2	1.7	1.0
5	3.0	15	.82	17	2.5	2.9	3.4	2.7	.89	7.1	26	.79
6	4.4	4.0	.81	11	1.9	2.0	26	2.1	1.2	2.8	6.9	.67
7	23	2.8	.81	3.9	1.6	1.5	21	1.7	1.0	1.9	2.9	.58
8	34	2.5	1.1	3.8	19	1.2	16	1.5	3.0	3.3	1.7	.51
9	8.9	2.2	1.4	2.3	5.5	1.0	5.6	1.4	5.6	3.9	1.1	.54
10	17	1.8	1.2	1.6	3.4	.93	19	1.4	7.3	2.4	3.3	.67
11	7.0	1.8	2.4	1.2	2.3	.82	11	2.2	4.4	1.3	3.3	.65
12	5.5	14	1.5	1.2	1.7	.78	4.4	2.9	8.3	1.3	11	.49
13	4.0	17	1.1	8.7	1.6	.81	4.9	1.9	14	8.0	5.2	.43
14	5.2	4.4	1.1	3.8	4.2	.94	43	1.5	4.3	2.5	2.5	.42
15	13	4.0	1.4	4.9	15	.94	16	1.5	3.2	1.4	2.2	.43
16	56	2.8	2.6	2.8	8.2	1.6	19	1.9	6.3	.97	4.3	.39
17	11	2.4	2.0	1.8	4.1	1.5	43	12	6.2	.80	2.3	.35
18	5.7	1.8	1.3	1.3	2.8	1.1	24	13	2.7	.67	1.3	.35
19	9.1	1.6	1.0	1.0	12	.94	10	4.4	2.0	.59	.92	.35
20	6.7	1.4	.87	.90	28	.82	5.1	9.6	1.4	.64	.73	.35
21	5.9	1.4	.76	.82	9.5	.76	5.4	6.2	1.4	.58	.68	.34
22	5.4	1.3	.72	.74	3.9	.88	4.6	3.9	2.7	.51	2.5	.33
23	6.1	1.7	.67	.70	4.5	2.8	9.6	6.3	4.8	.45	7.1	.34
24	35	2.2	.65	.67	4.8	1.8	5.1	10	7.8	.53	2.9	.38
25	12	3.8	.71	.65	3.2	1.9	3.2	4.8	4.2	.52	2.1	.36
26	18	4.6	110	.90	3.3	4.6	2.5	5.2	2.4	.43	5.2	.35
27	50	2.3	9.8	.80	2.3	8.0	2.1	3.1	5.3	2.4	16	.35
28	8.9	1.7	3.7	2.4	1.8	18	1.9	2.5	3.3	6.4	3.6	.35
29	8.6	1.4	2.5	46	1.4	29	5.5	4.8	1.9	2.3	2.2	.35
30	7.6	1.3	2.0	19	---	9.5	3.8	4.2	1.6	1.3	1.3	.35
31	6.0	---	1.5	21	---	8.1	---	2.7	---	2.0	2.2	---
TOTAL	400.4	130.3	158.38	164.78	170.9	128.82	337.2	129.1	113.19	76.19	127.15	20.87
MEAN	12.9	4.34	5.11	5.32	5.89	4.16	11.2	4.16	3.77	2.46	4.10	.70
MAX	56	17	110	46	28	29	43	13	14	8.0	26	4.0
MIN	3.0	1.3	.65	.65	1.4	.76	1.9	1.4	.89	.43	.68	.33
AC-FT	794	258	314	327	339	256	669	256	225	151	252	41

CAL YR 1983 TOTAL 2567.56 MEAN 7.03 MAX 110 MIN .09 AC-FT 5090
WTR YR 1984 TOTAL 1957.28 MEAN 5.35 MAX 110 MIN .33 AC-FT 3880

16726000 UPPER HAMAKUA DITCH ABOVE WAIMEA RESERVOIR DIVERSION, NEAR KAMUELA

LOCATION.--Lat 20°03'31", long 155°37'40", Hydrologic Unit 20010000, on left bank 120 ft upstream from diversion intake leading to Waimea Reservoir and 3.7 mi northeast of Kamuela Post Office.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,020 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from Kawainui, Kawaiki, and Alakahi Streams for use in vicinity of Kamuela. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years, 9.78 ft³/s (7,090 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 48 ft³/s Apr. 6, 1977, and Jan. 13, 1979; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 43 ft³/s Oct. 16; no flow for several days in September.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	12	1.3	1.4	13	1.2	9.8	4.4	1.3	16	2.7	11
2	11	21	1.1	1.1	6.2	6.1	4.4	4.5	.91	27	2.0	6.3
3	8.9	19	.90	.87	32	18	3.2	7.3	.71	5.5	1.3	2.6
4	7.5	13	.79	.75	13	22	21	6.8	.68	3.8	4.2	1.5
5	6.9	26	.65	15	5.1	5.8	5.1	4.5	1.5	18	42	1.0
6	8.4	13	.61	24	2.9	2.2	24	2.9	1.6	4.8	27	.72
7	24	7.5	.58	7.4	2.2	1.4	41	2.1	1.5	3.4	7.4	.52
8	39	5.1	1.1	7.2	30	.93	41	1.6	8.7	14	3.6	.36
9	18	3.6	1.4	3.8	29	.69	17	1.3	21	11	2.1	.32
10	27	2.7	1.5	2.4	12	.58	26	1.1	17	4.7	11	.45
11	13	2.4	5.3	1.3	4.1	.53	27	3.0	9.2	2.3	11	.47
12	12	17	1.6	.92	2.4	.47	9.1	5.0	15	2.1	14	.25
13	9.8	20	.93	11	2.5	.46	11	2.0	32	22	16	.16
14	11	9.1	2.3	1.7	7.3	.52	42	1.3	23	8.8	5.6	.10
15	22	7.6	2.3	1.7	23	.54	42	1.2	9.0	2.9	4.7	.00
16	43	4.6	5.7	2.8	25	1.2	24	1.6	11	1.9	11	.00
17	17	3.4	2.5	2.6	8.2	1.3	.55	16	17	1.4	4.9	.00
18	10	2.6	1.2	1.3	5.1	.64	.28	25	4.7	1.1	2.2	.00
19	17	2.2	.76	1.1	20	.46	.18	6.6	3.6	.85	1.4	.00
20	9.6	1.8	.59	.90	40	.38	.82	26	2.7	.93	1.0	.00
21	8.2	1.5	.49	.77	27	.30	.30	13	2.7	.79	1.2	.00
22	7.7	1.4	.40	.65	7.3	.26	.19	5.4	3.4	.57	8.9	.00
23	7.7	2.0	.34	.57	7.5	1.4	.47	8.6	7.0	.45	23	.00
24	19	3.1	.28	.54	10	1.0	5.1	30	19	.50	6.8	.00
25	12	4.9	.41	.51	5.6	1.2	6.5	13	16	.45	4.1	.00
26	17	7.7	39	.90	6.0	7.3	4.7	7.4	4.3	.34	8.2	.00
27	40	3.5	23	.85	3.7	16	3.4	3.6	12	2.1	33	.00
28	13	2.3	10	1.6	2.2	28	2.9	3.7	8.1	15	12	.00
29	10	1.8	6.1	29	1.5	37	13	6.3	3.2	3.5	4.6	.00
30	7.8	1.5	2.7	36	---	24	12	3.6	2.3	1.9	2.4	.00
31	8.7	---	1.8	36	---	27	---	2.1	---	3.0	4.1	---
TOTAL	482.2	223.3	117.63	196.63	353.8	208.86	398.99	220.9	260.10	181.08	283.4	25.75
MEAN	15.6	7.44	3.79	6.34	12.2	6.74	13.3	7.13	8.67	5.84	9.14	.86
MAX	43	26	39	36	40	37	42	30	32	27	42	11
MIN	6.9	1.4	.28	.51	1.5	.26	.18	1.1	.68	.34	1.0	.00
AC-FT	956	443	233	390	702	414	791	438	516	359	562	51

CAL YR 1983 TOTAL 4021.75 MEAN 11.0 MAX 43 MIN .00 AC-FT 7980
WTR YR 1984 TOTAL 2952.64 MEAN 8.07 MAX 43 MIN .00 AC-FT 5860

16727000 UPPER HAMAKUA DITCH ABOVE PUUKAPU RESERVOIR, NEAR KAMUELA

LOCATION.--Lat 20°02'53", long 155°37'17", Hydrologic Unit 20010000, on right bank 25 ft downstream from pipe railed bridge and 4.0 mi northeast of Kamuela Post Office.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 2,890 ft, from topographic map.

REMARKS.--Records fair. Ditch diverts into Waimea Reservoir for use in vicinity of Kamuela. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 1.39 ft^3/s (1,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 29 ft^3/s Nov. 11, 12, 19, 1980; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4.0 ft^3/s Dec. 26; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.12	.03	.00	.12	.06	.00	.00	.00	.00
2	.01	.00	.00	.12	.05	.00	.10	.06	.00	.00	.00	.00
3	.01	.00	.00	.06	.06	.00	.05	.05	.00	.00	.00	.00
4	.01	.00	.00	.01	.03	.02	.08	.02	.00	.00	.00	.00
5	.01	.00	.00	.06	.03	.00	.10	.00	.00	.00	.00	.00
6	.01	.00	.00	.06	.03	.00	.12	.00	.00	.00	.00	.00
7	.01	.00	.00	.05	.03	.00	.15	.00	.00	.00	.00	.00
8	.01	.00	.00	.05	.05	.00	.15	.00	.00	.00	.00	.00
9	.01	.00	.00	.05	.04	.00	.12	.00	.00	.00	.00	.00
10	.01	.00	.00	.05	.03	.00	.15	.00	.02	.00	.00	.00
11	.01	.00	.00	.05	.04	.00	.12	.00	.03	.00	.00	.00
12	.01	.00	.00	.05	.03	.00	.12	.00	.04	.00	.00	.00
13	.01	.00	.00	.05	.03	.00	.12	.00	.01	.00	.00	.00
14	.01	.00	.00	.05	.03	.00	.18	.00	.00	.00	.00	.00
15	.01	.00	.00	.04	.04	.00	.15	.00	.00	.00	.00	.00
16	.28	.00	.00	.04	.03	.00	.04	.00	.00	.00	.00	.00
17	.00	.00	.00	.04	.01	.00	.02	.00	.00	.00	.00	.00
18	.00	.01	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00
19	.00	.03	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.02	.00	.02	.01	.00	.05	.00	.00	.00	.00	.00
21	.00	.01	.00	.01	.02	.00	.08	.00	.00	.00	.00	.00
22	.00	.01	.00	.00	.01	.00	.06	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.02	.00	.05	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.02	.00	.10	.01	.00	.00	.00	.00
25	.00	.00	.00	.00	.01	.00	.08	.00	.00	.00	.00	.00
26	.00	.00	4.0	.00	.01	.02	.08	.00	.00	.00	.00	.00
27	.00	.00	.12	.00	.00	.12	.05	.00	.00	.00	.00	.00
28	.00	.00	.15	.00	.00	.08	.00	.00	.00	.00	.00	.00
29	.00	.00	.10	.04	.00	.15	.00	.00	.00	.00	.00	.00
30	.00	.00	.02	.03	---	.15	.04	.00	.00	.00	.00	.00
31	.00	---	.06	.04	---	.15	---	.00	---	.00	.00	---
TOTAL	.43	.08	4.45	1.15	.72	.69	2.48	.20	.10	.00	.00	.00
MEAN	.014	.003	.14	.037	.025	.022	.083	.006	.003	.00	.00	.00
MAX	.28	.03	4.0	.12	.06	.15	.18	.06	.04	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.8	.2	8.8	2.3	1.4	1.4	4.9	.4	.2	.00	.00	.00

CAL YR 1983 TOTAL 43.84 MEAN .12 MAX 5.0 MIN .00 AC-FT 87
WTR YR 1984 TOTAL 10.30 MEAN .028 MAX 4.0 MIN .00 AC-FT 20

16756000 KOHAKOHAU STREAM NEAR KAMUELA

LOCATION.--Lat 20°02'38", long 155°41'10", Hydrologic Unit 20010000, on left bank 0.6 mi upstream from Oolamakapehu Gulch and 1.7 mi northwest of Kamuela.

DRAINAGE AREA.--2.51 mi^2.

PERIOD OF RECORD.--March 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,273 ft above mean sea level (by stadia survey by State Department of Land and Natural Resources). Prior to Jan. 11, 1967, at site 0.5 mi upstream at different datum.

REMARKS.--Records good. Parker Ranch pipeline diverts above station at altitude 4,250 ft. Hawaii Division of Water and Land Development diverts by pipeline 0.3 mi above station at altitude 3,400 ft for domestic use in the Kamuela and Kawaihae areas since Aug. 20, 1973. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--28 years, 8.63 ft^3/s (6,250 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,880 ft^3/s Aug. 7, 1958, gage height, 10.76 ft, site and datum then in use, from rating curve extended above 70 ft^3/s by test of model of station site, no flow at times in 1968, 1971-84.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 990 ft^3/s Dec. 26, gage height, 5.37 ft, from rating curve extended above 46 ft^3/s on basis of computation of flow over dam at gage height 6.20 ft, no other peak above base of 310 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 19
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	3.1	.00	.00	2.2	.00	2.7	1.8	.72	.22	.00	1.6
2	6.3	19	.00	.00	.35	7.2	1.6	1.5	.55	1.2	.00	.98
3	3.4	9.0	.00	.00	8.2	8.4	1.1	1.7	.45	.00	.00	.45
4	2.5	4.6	.00	.00	.79	16	12	1.7	.26	.00	.00	.25
5	2.3	21	.00	7.7	.02	3.0	2.4	1.3	.00	.50	13	.13
6	2.2	4.6	.00	15	.00	1.7	31	1.0	.00	.00	7.6	.04
7	21	2.7	.00	.04	.00	1.2	32	.85	.00	.00	2.0	.00
8	47	2.1	.00	.00	11	.94	25	.71	.00	.00	.65	.00
9	12	1.6	.00	.00	4.3	.79	6.6	.59	.00	.37	.26	.00
10	22	1.2	.00	.00	1.1	.69	29	.55	.52	.03	.75	.00
11	7.3	1.1	.00	.00	.14	.64	24	.63	.04	.00	.64	.00
12	3.9	9.5	.00	.00	.00	.54	4.7	.72	.68	.00	2.8	.00
13	2.8	22	.00	.18	.00	.54	2.5	.50	16	.23	4.2	.00
14	3.3	4.6	.00	.03	.00	.39	53	.41	.58	.00	.76	.00
15	14	3.8	.00	2.1	11	.00	28	.39	.00	.00	.37	.00
16	82	2.4	.00	.08	13	.00	25	.03	.00	.00	.00	.00
17	21	1.8	.00	.00	2.8	.00	64	.12	2.7	.00	.00	.00
18	5.4	1.4	.00	.00	.66	.00	39	12	.00	.00	.00	.00
19	6.6	1.2	.00	.00	6.9	.00	18	2.8	.00	.00	.00	.00
20	.33	1.1	.00	.00	41	.00	5.0	13	.00	.00	.00	.00
21	.03	1.0	.00	.00	16	.00	4.7	5.0	.00	.00	.00	.00
22	.02	.95	.00	.00	1.2	.00	3.4	2.8	.00	.00	.00	.00
23	.02	1.1	.00	.00	.04	.00	9.0	3.3	.00	.00	.00	.00
24	41	1.1	.00	.00	2.9	.00	4.2	13	.71	.00	.00	.00
25	20	1.2	.00	.00	.01	.00	2.4	4.7	1.0	.00	.00	.00
26	20	2.1	227	.00	.00	.00	1.8	2.7	.00	.00	.00	.00
27	76	1.2	33	.00	.00	.00	1.4	1.5	1.8	.00	12	.00
28	11	.94	4.8	.00	.00	13	1.3	1.1	.58	.00	3.0	.00
29	8.0	.81	.10	41	.00	35	5.5	1.5	.00	.00	1.2	.00
30	5.0	.63	.02	29	---	16	4.4	1.7	.00	.00	.53	.00
31	4.6	---	.00	35	---	5.9	---	1.0	---	.00	.64	---
TOTAL	462.00	128.83	264.92	130.13	123.61	111.93	444.7	80.60	26.59	2.55	50.40	3.45
MEAN	14.9	4.29	8.55	4.20	4.26	3.61	14.8	2.60	.89	.082	1.63	.11
MAX	82	22	227	41	41	35	64	13	16	1.2	13	1.6
MIN	.02	.63	.00	.00	.00	.00	1.1	.03	.00	.00	.00	.00
AC-FT	916	256	525	258	245	222	882	160	53	5.1	100	6.8

CAL YR 1983 TOTAL 3053.69 MEAN 8.37 MAX 227 MIN .00 AC-FT 6060
WTR YR 1984 TOTAL 1829.71 MEAN 5.00 MAX 227 MIN .00 AC-FT 3630

16758000 WAIKOLOA STREAM AT MARINE DAM, NEAR KAMUELA

LOCATION.--Lat 20°02'48", long 155°39'58", Hydrologic Unit 20010000, on right bank 160 ft upstream from Marine Dam, 0.4 mi east of Puu Ohu, and 1.6 mi north of Kamuela.

DRAINAGE AREA.--1.18 mi².

PERIOD OF RECORD.--May 1947 to current year.

REVISED RECORDS.--WSP 1569: Drainage area. WSP 1937: 1948(M), 1949-51(P), 1952(M), 1954(M), 1955, 1956-57(P), 1958-60.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,460 ft, from topographic map.

REMARKS.--Records good. Diversion above station for livestock and domestic use. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--37 years, 8.86 ft³/s (6,420 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,410 ft³/s Nov. 18, 1979, gage height 6.84 ft, from rating curve extended above 120 ft³/s on basis of computations of flow over dam at gage heights 5.46 ft and 5.96 ft; minimum, 0.59 ft³/s Oct. 3-6, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 180 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 16	0900	266	3.62
Oct. 27	0100	308	3.76
Dec. 26	0830	*1050	5.03

Minimum discharge, 1.5 ft³/s Sept. 26-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	6.0	3.5	2.8	5.8	2.6	4.0	4.4	2.9	8.3	2.8	4.5
2	8.4	12	3.5	2.8	4.1	4.1	3.4	4.1	2.7	8.1	2.8	3.6
3	5.8	8.6	3.3	2.5	9.2	5.9	3.3	4.9	2.6	4.2	2.6	2.6
4	5.1	6.9	3.3	2.5	6.9	8.9	5.6	4.9	2.9	4.4	3.2	2.4
5	4.6	14	3.3	20	4.0	3.7	3.6	3.9	3.1	8.1	28	2.2
6	5.3	6.7	3.3	14	3.3	3.4	24	3.4	3.0	4.5	9.8	2.1
7	27	5.1	3.3	5.5	3.2	2.9	24	3.2	3.0	3.8	4.6	2.0
8	42	4.4	3.6	4.6	18	2.6	16	2.9	4.6	7.1	3.3	2.0
9	12	4.3	3.6	3.5	9.5	2.5	6.6	2.9	6.5	15	2.7	2.0
10	22	3.8	3.6	3.0	4.8	2.4	17	3.0	7.5	5.9	3.2	2.0
11	10	3.6	5.8	2.8	3.6	2.4	11	3.7	5.1	3.8	3.3	1.9
12	7.8	13	4.0	3.3	3.2	2.3	5.6	4.2	7.9	3.7	3.0	1.9
13	6.7	17	3.5	10	3.2	2.5	5.9	3.1	12	8.0	2.8	1.8
14	8.1	7.5	4.1	5.5	4.3	2.4	56	2.8	6.2	4.4	2.4	1.8
15	22	7.8	4.6	7.1	10	2.4	21	2.7	4.8	3.6	2.5	1.8
16	102	5.3	6.4	4.3	12	2.6	16	2.7	5.8	3.2	4.3	1.8
17	16	4.4	4.1	3.2	6.2	2.5	39	7.4	6.6	3.0	2.9	1.7
18	9.2	4.1	3.6	2.8	4.1	2.3	24	11	4.3	2.9	2.4	1.7
19	16	4.0	3.3	2.6	5.8	2.2	14	4.6	3.8	2.9	2.2	1.7
20	8.9	3.8	3.2	2.5	26	2.0	9.7	7.1	3.5	2.8	2.1	1.7
21	6.4	3.6	3.2	2.4	13	2.0	9.7	5.3	3.3	2.7	2.4	1.7
22	5.3	3.6	3.0	2.4	6.2	2.1	7.1	4.0	3.3	2.6	4.1	1.6
23	5.5	3.8	3.0	2.3	4.6	2.2	11	5.0	4.0	2.5	7.8	1.6
24	26	4.0	3.0	2.3	6.4	2.1	8.2	11	7.9	2.7	3.4	1.7
25	12	4.8	3.3	2.3	4.6	2.1	5.4	6.5	6.1	2.5	2.7	1.6
26	21	5.8	173	2.3	4.8	3.4	4.4	6.1	4.1	2.5	2.7	1.6
27	96	4.3	17	2.2	3.8	5.8	3.9	4.2	6.2	3.0	12	1.6
28	14	3.8	6.4	2.4	3.5	16	3.6	3.5	5.6	5.3	4.6	1.5
29	12	3.5	4.0	28	3.0	22	5.0	3.7	3.9	3.4	3.0	1.5
30	8.1	3.6	3.3	28	---	11	5.1	3.8	3.7	2.9	2.5	1.5
31	7.2	---	3.0	22	---	7.4	---	3.4	---	2.9	3.1	---
TOTAL	565.4	183.1	299.1	201.9	197.1	138.7	373.1	143.4	146.9	140.7	139.2	59.1
MEAN	18.2	6.10	9.65	6.51	6.80	4.47	12.4	4.63	4.90	4.54	4.49	1.97
MAX	102	17	173	28	26	22	56	11	12	15	28	4.5
MIN	4.6	3.5	3.0	2.2	3.0	2.0	3.3	2.7	2.6	2.5	2.1	1.5
AC-FT	1120	363	593	400	391	275	740	284	291	279	276	117

CAL YR 1983 TOTAL 3250.41 MEAN 8.91 MAX 173 MIN .94 AC-FT 6450
WTR YR 1984 TOTAL 2587.7 MEAN 7.07 MAX 173 MIN 1.5 AC-FT 5130

16759000 HAUANI GULCH NEAR KAMUELA

LOCATION.--Lat 20°02'28", long 155°39'05", Hydrologic Unit 20010000, on left bank 800 ft downstream from small tributary and 1.8 mi northeast of Kamuela.

DRAINAGE AREA.--0.47 mi².

PERIOD OF RECORD.--March 1956 to current year. Prior to July 1960, published as Hauani Stream near Kamuela.

GAGE.--Water-stage recorder. Concrete control since Feb. 27, 1963. Datum of gage is 3,117.42 ft above mean sea level (Hawaii County Board of Water Supply bench mark).

REMARKS.--Records good. Diversion above station for livestock and domestic use. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--28 years, 1.56 ft³/s (1,130 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 822 ft³/s Nov. 18, 1979, gage height, 4.56 ft, from rating curve extended above 11 ft³/s on basis of slope-conveyance study; maximum gage height, 4.65 ft Oct. 23, 1957; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 78 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)
Oct. 16	0830	168	3.09
Oct. 27	0100	114	2.82
Dec. 26	0830	*515	4.03

Minimum discharge, 0.03 ft³/s Sept. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	.81	.31	.25	.54	.21	.34	.29	.19	1.1	.19	.33
2	1.1	2.4	.29	.72	.39	.29	.24	.29	.18	.72	.18	.21
3	.77	1.1	.28	.21	1.1	.43	.20	.37	.17	.32	.16	.13
4	.65	1.1	.27	.20	.81	.64	.36	.46	.17	.29	.28	.10
5	.58	2.8	.25	4.2	.35	.28	.24	.30	.20	.60	4.8	.09
6	.56	.96	.24	2.3	.26	.21	5.4	.24	.20	.31	1.1	.09
7	4.7	.75	.23	.67	.23	.18	5.2	.21	.20	.27	.46	.08
8	11	.69	.25	.53	3.1	.17	3.0	.20	.71	.60	.24	.08
9	1.8	.59	.26	.32	.91	.15	.83	.19	.66	1.7	.15	.08
10	4.1	.54	.28	.26	.42	.14	4.0	.19	.72	.54	.23	.08
11	1.2	.50	.56	.23	.29	.15	1.4	.25	.39	.33	.21	.08
12	.96	3.8	.27	.32	.25	.13	.68	.41	1.2	.34	.23	.07
13	.85	2.9	.22	.58	.25	.14	.73	.22	1.6	.79	.23	.06
14	1.1	.91	.25	.42	.34	.16	14	.19	.64	.35	.15	.06
15	3.1	.85	.29	.46	3.0	.14	4.2	.18	.39	.28	.15	.07
16	34	.64	.41	.30	1.2	.16	3.2	.19	.58	.25	.29	.07
17	3.6	.55	.27	.23	.54	.15	8.9	.55	.59	.23	.17	.06
18	1.5	.49	.21	.20	.35	.13	3.2	1.0	.35	.21	.12	.05
19	2.5	.45	.19	.19	1.2	.11	1.6	.35	.30	.21	.10	.06
20	1.2	.43	.18	.17	4.7	.10	1.5	.77	.26	.21	.09	.06
21	.84	.41	.17	.16	1.6	.09	1.3	.43	.23	.19	.09	.05
22	.73	.42	.16	.15	.62	.10	.87	.30	.22	.18	.29	.05
23	.74	.45	.15	.14	.52	.11	1.4	.27	.23	.18	.87	.05
24	3.4	.48	.14	.13	.62	.10	.85	.89	.43	.19	.20	.06
25	1.7	.56	.34	.13	.41	.10	.50	.53	.46	.18	.14	.06
26	2.8	.65	54	.15	.41	.40	.39	.56	.27	.16	.12	.05
27	26	.39	3.7	.12	.31	.66	.34	.29	.44	.37	1.2	.04
28	2.2	.35	1.0	.13	.26	2.3	.32	.25	.38	.66	.34	.04
29	1.7	.34	.46	5.6	.23	3.6	.40	.34	.25	.26	.19	.04
30	1.2	.33	.34	2.8	---	1.4	.38	.33	.22	.20	.14	.04
31	.94	---	.29	3.1	---	.96	---	.23	---	.19	.20	---
TOTAL	119.52	27.64	66.26	25.27	25.21	13.89	65.97	11.27	12.83	12.41	13.31	2.39
MEAN	3.86	.92	2.14	.82	.87	.45	2.20	.36	.43	.40	.43	.080
MAX	34	3.8	54	5.6	4.7	3.6	14	1.0	1.6	1.7	4.8	.33
MIN	.56	.33	.14	.12	.23	.09	.20	.18	.17	.16	.09	.040
AC-FT	237	55	131	50	50	28	131	22	25	25	26	4.7

CAL YR 1983 TOTAL 552.43 MEAN 1.51 MAX 54 MIN .02 AC-FT 1100
WTR YR 1984 TOTAL 395.97 MEAN 1.08 MAX 54 MIN .04 AC-FT 785

AVAILABLE

16764000 HILEA GULCH TRIBUTARY NEAR HONUAPO

LOCATION.--Lat 19°10'27", long 155°35'58", Hydrologic Unit 20010000, on right bank 0.5 mi upstream from mouth, 6.6 mi northwest of Honuapo, and 6.7 mi west of Punaluu.

DRAINAGE AREA.--9.17 mi^2.

PERIOD OF RECORD.--February 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,940 ft, from topographic map.

REMARKS.--Records fair. No diversion above station. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--18 years, 8.10 ft^3/s (5,870 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft^3/s Mar. 18, 1980, gage height, 8.00 ft, from rating curve extended above 75 ft^3/s; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 268 ft^3/s Aug. 11, gage height, 3.79 ft, no peak above base of 600 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.07	.00	.00	.00	.00	.00	.00	.27	10	38	1.1
2	12	.07	.00	.00	.00	.00	.00	.00	[illegible]	2.4	3.7	.78
3	1.1	.07	.14	.00	.00	.00	.00	.00	[illegible]	15	.91	.48
4	10	.06	.18	.00	.00	.00	.00	.00	.04	1.1	.51	3.6
5	1.5	.06	.00	.00	.00	.00	.00	.00	1.7	.60	1.4	1.1
6	.76	.06	.00	.00	.00	.00	.00	1.8	.95	.58	.95	.62
7	.69	.06	.00	.00	.00	.00	.00	27	.48	.30	.46	.42
8	6.1	.05	.00	.00	.01	.00	.00	2.0	.22	.74	.35	.32
9	1.2	.05	.00	.00	.00	.00	.00	.17	.12	1.6	.29	.24
10	18	.05	.00	.05	.00	.00	.00	.10	.01	.65	4.9	.22
11	2.0	.05	.00	.00	.00	.00	.00	.09	.04	1.0	41	.20
12	.82	.05	.00	.00	.00	.00	.00	.17	.11	.74	4.4	.17
13	.58	.05	.00	.00	.00	.00	.00	.17	.78	.34	.77	.16
14	.57	.05	.00	.00	.00	.00	.00	.02	.42	.21	.58	.41
15	.42	.05	.00	.00	.00	.00	.00	1.1	21	.32	6.7	.40
16	6.9	.04	.00	.00	.00	.00	.00	.26	15	4.4	5.7	.40
17	1.2	.04	.00	.00	.00	.00	.00	.27	5.1	.84	1.1	.41
18	.57	.05	.00	.00	.00	.00	.00	.20	1.3	.32	.70	.39
19	.38	5.7	.00	.00	.00	.00	.00	.03	.77	12	.68	.76
20	.49	.33	.00	.10	.00	.00	.00	.00	.61	4.6	1.1	2.8
21	.34	.07	.00	.00	.00	.00	.00	.40	.41	2.8	.67	4.4
22	.27	.07	.00	.00	.00	.00	.00	.18	.55	.55	.55	1.4
23	.21	.07	.00	.00	.00	.00	.00	.01	.44	.36	.67	1.5
24	.37	.06	.00	.00	.00	.00	.00	.08	3.6	.36	.56	2.7
25	.28	3.7	.00	.00	.00	.00	.00	.41	1.4	1.9	1.0	28
26	.15	17	.30	.00	3.3	.00	.00	.48	.52	1.1	18	1.6
27	.39	.36	.00	.00	.00	.00	.00	.75	1.1	8.5	5.6	24
28	.23	.07	.00	.00	.00	.00	.00	.38	.55	1.9	3.7	18
29	.16	.00	.00	.00	.00	.00	.00	.33	.29	.46	2.3	9.3
30	.11	.00	.00	.00	---	.00	.00	7.0	.28	.58	.97	18
31	.07	---	.00	.00	---	.00	---	.77	---	.74	.61	---
TOTAL	69.36	28.41	.62	.15	3.31	.00	.00	44.17	58.20	76.99	148.83	123.88
MEAN	2.24	.95	.020	.005	.11	.00	.00	1.42	1.94	2.48	4.80	4.13
MAX	18	17	.30	.10	3.3	.00	.00	27	21	15	41	28
MIN	.07	.00	.00	.00	.00	.00	.00	.00	.01	.21	.29	.16
AC-FT	138	56	1.2	.3	6.6	.00	.00	88	115	153	295	246

CAL YR 1983 TOTAL 419.00 MEAN 1.15 MAX 44 MIN .00 AC-FT 831
WTR YR 1984 TOTAL 553.92 MEAN 1.51 MAX 41 MIN .00 AC-FT 1100

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of base flow or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1984

Hawaii, Island of Kauai

Station No.	Station name	Location	Drainage area mi²	Period of record	Measurements Date	Measurements Discharge (ft³/s)
16011000	Waiakoali Stream near Waimea	Lat 22°07'42", long 159°37'27", 0.3 mi upstream from mouth and 12 mi northeast of Waimea.	1.58	1909-13≠, 1914-17, 1919-25≠, 1961-62, 1964, 1966-70, 1972-84	4- 9-84 7-27-84	5.98 .86
16012000	Kauaikinana Stream near Waimea	Lat 22°08'12", long 159°37'50", 0.6 mi upstream from mouth and 12 mi northeast of Waimea.	.84	1911-13, 1915-17, 1919-25≠, 1961-62, 1964, 1966-84	4- 9-84 7-27-84	3.06 .66
16102000	China ditch near Hanalei	Lat 22°11'10", long 159°28'00", on left bank just below intake and 3.0 mi southeast of Hanalei.	-	1913-19≠, 1977-84	3-23-84	11.5

Hawaii, Island of Oahu

Discharge measurements made at low-flow partial-record stations during water year 1983

Station No.	Station name	Location	Drainage area mi²	Period of record	Measurements Date	Measurements Discharge (ft³/s)
16265500	Left tributary to Right Branch of Kamooalii Stream near Kaneohe	Lat 21°23'17", long 157°47'39", 0.4 mi south of Hawaiian Memorial Park cemetery, 0.9 mi north of Pali Golf Course, and 1.4 mi south of Castle High School.	.22	1983	2- 2-83 5-16-83	a.1 No flow
*16265700	Kamooalii Stream at altitude 200 ft near Kaneohe	Lat 21°23'12", long 157°47'56", 0.5 mi southwest of Hawaiian Memorial Park cemetery, 0.9 mi northwest of Pali Golf Course, and 1.5 mi south of Castle High School.	.46	1983	2- 3-83 5-16-83 6-15-83 7-14-83 8-17-83 9-29-83	3.00 .90 .66 .61 .40 .32
*16266500	Hooleinaiwa Stream at altitude 220 ft, near Kaneohe	Lat 21°23'06", long 157°48'16", 0.7 mi southwest of Hawaiian Memorial Park cemetery, 1.2 mi northwest of Pali Golf Course, and 1.7 mi southwest of Castle High School.	.42	1983	2- 4-83 5-17-83 7-14-83 8-18-83 9-29-83	.82 .24 .20 .13 .15
*16267500	Hooleinaiwa Stream above confluence with Kamooalii Stream, near Kaneohe	Lat 21°23'15", long 157°48'19", 0.7 mi west of Hawaiian Memorial Park cemetery, 1.3 mi northwest of Pali Golf Course, and 1.5 mi southwest of Castle High School.	.58	1983	2- 4-83 5-17-83 7-14-83 8-18-83 9-29-83	1.17 .77 .85 .60 .85

* Also a water-quality partial-record station.
≠ Operated as a continuous-record gaging station.
a Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1984--Continued

Hawaii, Island of Oahu--Continued

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station name	Location	Drainage area mi²	Period of record	Measurements	
					Date	Discharge (ft³/s)
*16269500	Kuou Stream at altitude 220 ft, near Kaneohe	Lat 21°23'30", long 157°48'44", 1.0 mi west of Hawaiian Memorial Park cemetery, 1.6 mi southwest of Castle High School, and 1.9 mi northwest of Pali Golf Course.	0.34	1983	2- 3-83 5-17-83 6-15-83 7-14-83 8-17-83 9-28-83	1.34 .69 .55 .46 .11 .04

Discharge measurements made at low-flow partial-record stations during water year 1984

Station No.	Station name	Location	Drainage area mi²	Period of record	Measurements	
					Date	Discharge (ft³/s)
16201000	Right Branch of North Fork Kaukonahua Stream near Wahiawa	Lat 21°31'11", long 157°56'53", 200 ft above confluence with Left Branch and 4.5 mi east of Leilehua High School in Wahiawa.	1.17	1913-51≠, 1960-62, 1966, 1968-84	12- 5-83 3- 7-84 6- 6-84 9-12-84	2.43 1.56 1.28 2.50
16214000	Pearl Harbor Springs at Waiawa, near Pearl City	Lat 21°23'36", long 157°59'11", 0.7 mi west of Pearl City and 1.5 mi east of Waipahu Post Office.	-	1931-34≠, 1937-64≠, 1967-68, 1970-84	4-15-84 7-12-84	12.5 11.5
16224000	Pearl Harbor Springs at Kalauao, near Aiea	Lat 21°23'05", long 157°56'46", 300 ft downstream from Highway 90 and 0.8 mi west of Aiea Post Office.		1931-62≠, 1964-65≠, 1966-68, 1970-84	4-16-84 7-13-84	14.0 12.1
16264100	Kahanaiki Stream at Highway 61, near Kailua	Lat 21°22'49", long 157°46'06", at bridge on Highway 61 and 1.9 mi southwest of Kailua Post Office.	1.45	1960-63, 1965-66, 1971-81, 1983-84	12- 9-83 7- 2-84	.78 .43
16265500	Left tributary to Right Branch of Kamooalii Stream near Kaneohe	Lat 21°23'17", long 157°47'39", 0.4 mi south of Hawaiian Memorial Park cemetery, 0.9 mi north of Pali Golf Course, and 1.4 mi south of Castle High School.	.22	1983-84	9-17-84	No flow
*16265700	Kamooalii Stream at altitude 200 ft near Kaneohe	Lat 21°23'12", long 157°47'56", 0.5 mi southwest of Hawaiian Memorial Park cemetery, 0.9 mi northwest of Pali Golf Course, and 1.5 mi south of Castle High School.	.46	1983-84	10-26-83 2- 1-84 4-24-84	.21 a.05 a.05
*16266500	Hooleinaiwa Stream at altitude 220 ft, near Kaneohe	Lat 21°23'06", long 157°48'16", 0.7 mi southwest of Hawaiian Memorial Park cemetery, 1.2 mi northwest of Pali Golf Course, and 1.7 mi southwest of Castle High School.	.42	1983-84	10-26-83 2- 1-84 4-24-84 6-19-84 9-17-84	.10 .12 .19 .07 .04
*16267500	Hooleinaiwa Stream above confluence with Kamooalii Stream, near Kaneohe	Lat 21°23'15", long 157°48'19", 0.7 mi west of Hawaiian Memorial Park cemetery, 1.3 mi northwest of Pali Golf Course, and 1.5 mi southwest of Castle High School.	.58	1983-84	10-25-83 1-26-84 4-24-84 6-19-84	.46 .48 .68 .44
*16269500	Kuou Stream at altitude 220 ft, near Kaneohe	Lat 21°23'30", long 157°48'44", 1.0 mi west of Hawaiian Memorial Park cemetery, 1.6 mi southwest of Castle High School, and 1.9 mi northwest of Pali Golf Course.	.34	1983-84	10-27-83 2- 1-84 4-24-84 9-17-84	.03 .03 a.08 a.01
16283400	Kahaluu Stream near Kahaluu	Lat 21°27'14", long 157°50'17", 600 ft above Ahuimanu Stream and 0.6 mi south of Kahaluu.	1.29	1962-63, 1966, 1972-81, 1983-84	12- 9-83 6-27-84	1.42 .74
16295995	Kahana Stream at Mauka trail crossing, near Kahana	Lat 21°32'17", long 157°53'29", 1.8 mi upstream from main bridge on Kamehameha Highway and 2.8 mi southwest of Kaaawa School.	3.18	1960-62, 1966, 1971-72, 1974-81, 1983-84	12- 6-83 7- 3-84	15.5 13.4

* Also a water-quality partial-record station.
≠ Operated as a continuous-record gaging station.
a Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi²	Period of record	Measurements	
					Date	Discharge (ft³/s)
		Hawaii, Island of Oahu--Continued				
16297000	Kawa Stream near Kahana	Lat 21°32'33", long 157°53'00", 0.1 mi above confluence with Kahana Stream and 1.0 mi south of Kahana.	2.09	1914-17≠, 1958b, 1961-62, 1966, 1971-72, 1974-81, 1983-84	12- 8-83 7- 3-84	2.56 .27
		Hawaii, Island of Molokai				
16403400	Kapuhi Stream at altitude 1,000 ft, near Pelekunu	Lat 21°07'50", long 156°53'02", 500 ft upstream from Kawailena Stream, 2.2 mi south of former village of Pelekunu, and 5.4 mi north of Kamalo.	.51	1968-84	12- 1-83 3-13-84 5-18-84 8- 8-84	1.16 1.28 1.11 .65
16403500	Kawailena Stream near Pelekunu	Lat 20°07'52", long 156°53'05", 800 ft upstream from mouth, 2.2 mi south of former village of Pelekunu, and 5.5 mi north of Kamalo.	.65	1968-84	12- 1-83 3-13-84 5-18-84 8- 8-84	1.64 1.70 1.64 1.07
16403600	Kapuhi Stream near Pelekunu	Lat 21°07'57", long 156°52'56", on left bank 400 ft downstream from Kawailena Stream, 2.1 mi south of former village of Pelekunu, and 5.6 mi north of Kamalo.	1.20	1968-70≠, 1974-84	12- 1-83 3-13-84 5-18-84 8- 8-84	2.88 3.38 2.06 1.61
16403700	Kawainui Stream at altitude 1,000 ft, near Pelekunu	Lat 20°07'46", long 156°52'31", 400 ft upstream from Kawaipoko Stream, 2.4 mi south of former village of Pelekunu, and 5.4 mi north of Kamalo.	.79	1968-84	12- 1-83 3-13-84 5-17-84 8- 8-84	2.50 2.30 3.12 .83
16403800	Kawaipoko Stream near Pelekunu	Lat 21°07'48", long 156°52'30", 300 ft upstream from mouth, 2.4 mi south of former village of Pelekunu, and 5.4 mi north of Kamalo.	.26	1968-84	12- 1-83 3-13-84 5-17-84 8- 8-84	.65 .49 .52 .23
16403900	Kawainui Stream near Pelekunu	Lat 21°07'59", long 156°52'38", on right bank 900 ft upstream from confluence with Kapuhi Stream, 2.1 mi south of former village of Pelekunu, and 5.7 mi north of Kamalo.	1.17	1968-79≠, 1980-84	12- 1-83 3-13-84 5-17-84 8- 8-84	3.56 3.28 3.47 1.26

≠ Operated as a continuous-record gaging station.
b Gage height only.

Crest-stage partial-record stations

Prior to 1973, crest-stage partial-record station records for the State of Hawaii were published in an annual progress report entitled "An Investigation of Floods in Hawaii." The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements or peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1984

					Annual Maximum		
Station No.	Station name	Location	Drainage area mi²	Period of record	Date	Gage height (feet)	Dis-charge (ft³/s)
		Hawaii, Island of Kauai					
16038000	Waimea River at Waimea	Lat 21°57'23", long 159°39'59", 150 ft upstream from highway bridge at Waimea and 0.2 mi upstream from mouth.	86.5	1944-84b	-	<3.94	-
16052000	Hanapepe River at Hanapepe	Lat 21°54'47", long 159°35'33", 400 ft upstream from bridge on Highway 50 and 0.5 mi upstream from mouth.	26.6	1950-84b	-	<2.83	-
16052500	Lawai Stream near Koloa	Lat 21°54'11", long 159°30'21", on right bank at private road bridge, 0.9 mi upstream from mouth, and 2.4 mi southwest of Koloa.	6.62	1962-63, 1964-72#, 1973-84	3- 1-84	<2.34	<150
16055000	Huleia Stream near Lihue	Lat 21°57'20", long 159°25'23", at highway bridge, 3.7 mi southwest of Lihue, and 4.5 mi upstream from mouth.	17.6	1912-15#, 1962-67, 1968-70#, 1971-84	4-27-84	<4.98	<350
16071800	Wailua River near Kapaa	Lat 22°03'00", long 159°20'26", at State Park 600 ft upstream from highway bridge, 850 ft upstream from mouth, and 2.5 mi southwest of Kapaa.	52.6	1962-84b	-	<4.62	-
16073500	Konohiki Stream near Kapaa	Lat 22°04'01", long 159°20'21", at culvert on private road, 1.8 mi upstream from mouth, and 2.4 mi southwest of Kapaa High School.	3.38	1964-67, 1970-84	4-27-84	-	a60
16081200	Akulikuli Stream near Kapaa	Lat 22°06'25", long 159°22'07", at Kahuna road crossing, 830 ft upstream from mouth, and 3.5 mi northwest of Kapaa armory.	.40	1964-84	4-27-84	<3.40	a90
16084500	Kapaa Stream at old highway crossing, near Kealia	Lat 22°06'28", long 159°19'52", at abutment of old highway bridge, 100 ft upstream from road crossing, 1.4 mi northwest of Kealia, and 2.1 mi upstream from mouth.	14.0	1962-84	4-27-84	8.11	1,370
16085000	Homaikawaa Stream near Kealia	Lat 22°07'23", long 159°13'12", at culvert on Highway 56, 1.6 mi southeast of Anahola School, and 1.6 mi north of Kealia.	.85	1964-84	4-27-84	<1.42	a20
16097900	Puukumu Stream near Kilauea	Lat 22°13'01", long 159°25'18", at culvert on Highway 56, 0.8 mi northwest of Kilauea School, and 0.9 mi upstream from mouth.	.91	1964-68, 1971-84	4-27-84	<2.96	a30
16104200	Hanalei River at Highway 56 bridge, near Hanalei	Lat 22°12'50", long 159°28'43", at highway bridge, 1.6 mi northeast of Hanalei, and 2.4 mi upstream from mouth.	21.0	1963-84b	-	<6.92	-
16130000	Nahomalu Valley near Mana	Lat 22°02'41", long 159°45'17", on left bank 1.1 mi northeast of Mana, and 5.3 mi northwest of Kekaha School.	3.81	1962-63, 1964-71#, 1972-84	4-27-84	<3.19	a20

< Less than.
Operated as a continuous-record gaging station.
a Estimated.
b Gage height only.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi²	Period of record	Annual Maximum		
					Date	Gage height (feet)	Discharge (ft³/s)
		Hawaii, Island of Oahu					
16210500	Kaukonahua Stream at Waialua	Lat 21°33'56", long 158°07'26", 0.2 mi upstream from Highway 99, 0.4 mi southeast of Waialua High School, and 1.3 mi southwest of Weed Circle.	38.7	1963, 1968-84	4-19-84	-	a500
16211200	Poamoho Stream at Waialua	Lat 21°34'00", long 158°06'40", at culvert crossing of Kaheaka Road, 0.2 mi upstream from Highway 83, and 1.1 mi east of Waialua High School.	10.9	1967-84	4-19-84	-	a100
16211300	Makaleha Stream near Waialua	Lat 21°33'49", long 158°09'21", 1.0 mi southwest of Dillingham Ranch and 1.9 mi southwest of sugar mill at Waialua.	4.15	1958-63, 1964-65≠, 1966-84	1- 5-84	-	a60
16211400	Manini Gulch at Kaena	Lat 21°34'50", long 158°15'12", 180 ft upstream from Highway 99, 1.7 mi west of Camp Erdman, and 2.0 mi east of Kaena Point.	1.08	1974-84	1- 5-84	-	a20
16211500	Makua Stream at Makua	Lat 21°31'59", long 158°13'49", on left bank 20 ft upstream from old concrete highway ford, 140 ft downstream from Farrington Highway box culvert, 0.1 mi north of Makua cemetery, and 4.5 mi southeast of Kaena Point lighthouse.	4.28	1958-84	1- 5-84	5.30	a60
16211700	Makaha Stream at Makaha	Lat 21°28'47", long 158°12'31", 0.9 mi upstream from Farrington Highway and 1.1 mi north of junction of Farrington Highway and Makaha Valley Road.	5.25	1966-84	3- 2-84	6.96	110
16211800	Kaupuni Stream at altitude 372 ft, near Waianae	Lat 21°28'20", long 158°09'26", at abandoned diversion dam, 2.6 mi northeast of Waianae cemetery, and 2.8 mi northeast of junction of Waianae Valley Road and Farrington Highway.	3.58	1961-72≠, 1973-84	3- 2-84	3.63	a50
16212200	Mailiilii Stream near Waianae	Lat 21°27'34", long 158°08'05", at bridge at Lualualei Naval Reservation and 3.4 mi east of cemetery near Waianae.	1.51	1958-84	3- 2-84	-	a30
16212300	Nanakuli Stream at Nanakuli	Lat 21°23'08", long 158°08'11", 0.7 mi upstream from Highway 90 and 0.6 mi northeast of Nanakuli Post Office.	3.98	1968-84	3- 2-84	-	a50
16212450	Kaloi Gulch tributary near Honouliuli	Lat 21°22'41", long 158°03'45", at culvert on private road, 1.8 mi west of Honouliuli, and 2.8 mi northwest of Ewa Post Office.	1.70	1968-84	3- 2-84	-	a30
16212500	Honouliuli Stream near Waipahu	Lat 21°22'40", long 158°02'10", at bridge on Farrington Highway and 1.8 mi west of Waipahu Post Office.	11.0	1956-84	3- 2-84	.92	a90
16212601	Waikele Stream at Wheeler Field	Lat 21°28'44", long 158°03'07", at culvert 0.3 mi west of east-west runway at Wheeler Field and 1.9 mi southwest of Wahiawa Post Office.	6.35	1958, 1960-84	3- 2-84	4.68	171
16212700	Waikakalaua Stream near Wahiawa	Lat 21°27'50", long 158°01'38", 0.2 mi downstream from Kamehameha Highway and 2.4 mi south of Wahiawa Post Office.	7.49	1958-84	4-19-84	7.22	944
16212750	Huliwai Gulch near Kunia Camp	Lat 21°26'43", long 158°03'47", 200 ft upstream from Highway 75 and 1.2 mi south of Kunia Camp.	.84	1974-84	4-19-84	5.78	a20

≠ Operated as a continuous-record gaging station.
a Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi²	Period of record	Annual Maximum Date	Annual Maximum Gage height (feet)	Annual Maximum Discharge (ft³/s)
		Hawaii, Island of Oahu--Continued					
16223000	Waimalu Stream near Aiea	Lat 21°23'48", long 157°56'56", 1,300 ft upstream from bridge on Moanalua Road and 1.2 mi northwest of Aiea High School.	5.97	1952-70≠, 1973-84	1- 5-84	2.61	970
16224500	Kalauao Stream at Moanalua Road, at Aiea	Lat 21°23'07", long 157°56'22", on left bank at downstream side of Moanalua Road bridge, 0.4 mi northwest of Aiea Post Office, and 2.3 mi southeast of Pearl City Post Office.	2.59	1957-82≠, 1984	1- 5-84	4.87	979
16228000	Moanalua Stream near Honolulu	Lat 21°22'53", long 157°52'22", on left bank 1.8 mi northeast of Tripler Hospital and 5.0 mi north of Honolulu Post Office.	2.73	1927-78≠, 1979-84	4-19-84	3.66	272
*16228200	Moanalua Stream near Aiea	Lat 21°22'37", long 157°53'03", on right bank 1.1 mi northeast of Tripler Hospital and 2.9 mi east of Aiea sugar refinery.	3.34	1969-84	4-19-84	3.22	220
16228600	Moanalua Stream at Tripler Hospital	Lat 21°21'52", long 157°54'05", on right bank 0.5 mi west of Tripler Hospital and 1.6 mi northeast of Aliamanu School.	4.44	1971-84	4-19-84	13.43	339
16228900	Kalihi Stream near Kaneohe	Lat 21°22'35", long 157°49'32", on right bank 800 ft downstream from Likelike Highway and 2.8 mi southwest of Castle High School in Kaneohe.	.60	1967-71≠, 1972-84	1- 5-84	1.49	38
16235400	Waolani Stream at Honolulu	Lat 21°20'00", long 157°51'04", at Wyllie Street bridge and 1.8 mi northeast of Honolulu Post Office.	1.28	1958-84	4-19-84	1.09	148
16237500	Pauoa Stream at Honolulu	Lat 21°19'18", long 157°51'03", at Lusitana Street bridge and 1.1 mi northeast of Honolulu Post Office.	1.43	1958-84	4-19-84	.51	260
16247100	Manoa-Palolo Drainage Canal at Moiliili	Lat 21°17'24", long 157°49'17", on left bank at Kaimuki High School, 0.3 mi downstream from confluence of Manoa and Palolo Streams, and 0.6 mi upstream from point of discharge into Ala Wai Canal.	9.35	1968-84	4-19-84	4.60	a790
16247500	Wailupe Gulch at Aina Haina	Lat 21°17'46", long 157°45'29", at Ani Street bridge and 1.0 mi upstream from Kalanianaole Highway in Aina Haina.	2.35	1958-84	12-25-83	.88	a250
16247900	Kuliouou Valley at Kuliouou	Lat 21°17'50", long 157°43'35", at Kuliouou, 300 ft downstream of single-lane wooden bridge, and 0.6 mi upstream from Highway 72.	1.18	1958-59, 1970-84	12-25-83	29.67	140
16248800	Inoaole Stream at Waimanalo	Lat 21°29'31", long 157°42'40", 30 ft upstream from culvert on Hihimanu Street and 0.8 mi northwest of Waimanalo Post Office.	1.21	1958-84	12-25-83	-	a30
16249000	Waimanalo Stream at Waimanalo	Lat 21°21'12", long 157°43'52", on right bank 40 ft upstream from Highway 72 and 2.3 mi northwest of Waimanalo Post Office.	2.16	1967-70≠, 1971-84	12-25-83	4.92	a300
16249100	Kaelepulu Stream tributary at Kailua	Lat 21°21'44", long 157°44'22", 30 ft upstream from Kalanianaole Highway, 1.6 mi northwest of Waimanalo School, and 2.4 mi south of Kailua Post Office.	.16	1963-84	12-25-83	1.22	a5

* Also a water-quality partial-record station.
≠ Operated as a continuous-record gaging station.
a Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi^2	Period of record	Annual Maximum Date	Annual Maximum Gage height (feet)	Annual Maximum Discharge (ft^3/s)
		Hawaii, Island of Oahu--Continued					
16260500	Maunawili Stream at Highway 61, near Kailua	Lat 21°22'51", long 157°45'48", on right bank at downstream side of bridge on Highway 61, 0.6 mi west of Maunawili School, and 1.6 mi southwest of Kailua Post Office.	5.34	1958-67, 1968-71≠, 1972-84	3- 2-84	5.80	a420
16264800	Kawainui Canal at Kailua	Lat 21°24'15", long 157°45'28", at head of canal and 1.2 mi northwest of Kailua Post Office.	11.0	1957-60, 1963-64, 1967-84b	12-13-83	.88	-
16265000	Kawa Stream at Kaneohe	Lat 21°24'32", long 157°47'36", 50 ft upstream from bridge on Kaneohe Bay Drive at Kaneohe, 0.2 mi northeast of Castle High School, and 0.6 mi upstream from mouth.	1.19	1965, 1968-74, 1977-84	12-25-83	5.06	a20
16274499	Keaahala Stream at Kamehameha Highway, at Kaneohe	Lat 21°25'12", long 157°48'15", 35 ft upstream from bridge on Kamehameha Highway in Kaneohe.	.62	1959-84	12-25-83	2.56	a150
16279500	Heeia Stream at Kaneohe	Lat 21°25'17", long 157°49'01", 60 ft downstream from culvert on Kahekili Highway, 0.7 mi west of Kaneohe Post Office, and 0.8 mi southwest of Heeia.	1.80	1965-66, 1968-84	4-19-84	-	a70
16283480	Ahuimanu Stream near Kahaluu	Lat 21°27'04", long 157°50'13", at bridge on Ahuimanu Road and 0.8 mi south of Kahaluu.	2.31	1963-84	4-19-84	-	a150
16304500	Kaluanui Stream at Hauula	Lat 21°35'57", long 157°54'24", on left downstream wingwall of concrete bridge, 1.2 mi southeast of cemetery in Hauula, and 1.4 mi northeast of Sacred Falls.	2.12	1958-84	1- 5-84	1.45	a260
16310501	Malaekahana Stream at altitude 30 ft, near Kahuku	Lat 21°39'47", long 157°57'11", at abandoned plantation railroad bridge, 1.1 mi southwest of junction of plantation road and Highway 83, and 1.2 mi south of Kahuku Hospital.	4.05	1958-84	1- 5-84	-	a60
16311000	Oio Stream near Kahuku	Lat 21°41'32", long 157°59'48", 0.6 mi southwest of junction of plantation road and Highway 83 and 2.7 mi west of Kahuku Hospital.	2.13	1958-84	1- 5-84	-	a25
16317800	Kaunala Gulch near Sunset Beach	Lat 21°40'59", long 158°02'12", on downstream left bank wingwall of road bridge on Highway 83 near Sunset Beach and 2.9 mi northeast of Waimea.	1.98	1973-84	1- 5-84	3.31	a30
16318000	Paumalu Gulch at Sunset Beach	Lat 21°40'19", long 158°02'28", 0.4 mi upstream from Highway 83 at Sunset Beach and 2.2 mi northeast of Waimea.	2.59	1968-84	1- 5-84	2.44	a50
16331000	Waimea Gulch near Kawailoa Camp	Lat 21°37'29", long 158°04'58", at culvert on Ashley Road, 0.1 mi upstream from Highway 83, and 1.1 mi north of Kawailoa Camp.	2.23	1968-84	1- 5-84	-	a10
16340000	Anahulu River near Haleiwa	Lat 21°35'28", long 158°04'45", 1.7 mi southeast of junction of Emerson Road and Kamehameha Highway and 2.5 mi east of Waialua School at Haleiwa.	13.5	1958-84	1- 5-84	4.66	1,180
16350000	Opaeula Stream near Haleiwa	Lat 21°35'09", long 158°06'01", 0.6 mi upstream from Kamehameha Highway and 2.1 mi northeast of Waialua.	5.96	1956-84	4-19-84	11.36	a1,200

≠ Operated as a continuous-record gaging station.
a Estimated.
b Gage height only.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

					Annual Maximum		
Station No.	Station name	Location	Drainage area mi²	Period of record	Date	Gage height (feet)	Discharge (ft³/s)
		Hawaii, Island of Molokai					
16411300	Kakaako Gulch at Highway 46, near Mauna Loa	Lat 21°08'49", long 157°11'36", at Highway 46, 1.6 mi northeast of Mauna Loa, and 1.8 mi upstream from Kamakahi Gulch.	0.55	1964-84	-	-	No flow
16411320	Kakaako Gulch above Kamakahi Gulch, near Mauna Loa	Lat 21°10'11", long 157°11'56", 0.1 mi upstream from Kamakahi Gulch, 1.7 mi downstream from Highway 46, and 2.5 mi northeast of Mauna Loa.	1.40	1964-84	12-25-83	-	<1
16411400	Kakaako Gulch near Mauna Loa	Lat 21°10'39", long 157°12'31", on left bank 1.0 mi downstream from Kamakahi Gulch, and 3.0 mi north of Mauna Loa School.	5.34	1963-72≠, 1973-84	12-25-83	2.51	85
16411600	Kaunala Gulch near Mauna Loa	Lat 21°07'01", long 157°15'43", at Sand Haul Road, 3.2 mi east of Laau Point lighthouse, and 3.3 mi southwest of Mauna Loa.	.28	1964-84	12-25-83	.95	11
16411640	Halena Gulch near Mauna Loa	Lat 21°05'53", long 157°13'47", 2.7 mi southwest of Mauna Loa and 5.5 mi east of Laau Point.	2.07	1965-84	12-25-83	2.77	362
16411800	Kaluapeelua Gulch at Hoolehua	Lat 21°09'55", long 157°04'22", 0.4 mi south of Hoolehua and 2.1 mi west of Kualapuu.	1.46	1964-84	-	-	No flow
16413500	Manawainui Gulch near Kualapuu	Lat 21°07'42", long 157°03'25", at bridge on Highway 46, 0.5 mi south of Holomua School, and 2.3 mi southwest of Kualapuu.	10.4	1965-84	12-25-83	5.52	177
16415400	Wawaia Gulch at Kamalo	Lat 21°03'25", long 156°52'20", at Highway 45, 0.3 mi upstream from mouth, and 0.5 mi northeast of Kamalo.	2.12	1964-84	12-25-83	1.52	493
16419000	Pohakupili Gulch near Halawa	Lat 21°07'59", long 156°44'15", at Highway 45, 0.5 mi upstream from mouth, and 1.9 mi south of Halawa.	.48	1964-84	4-25-84	6.58	166
		Hawaii, Island of Maui					
16500100	Kepuni Gulch near Kahikinui House	Lat 20°37'21", long 156°15'16", on right bank 120 ft upstream from bridge on Highway 31, 400 ft upstream from Kamole Gulch, 1.1 mi east of Kahikinui House, and 8.5 mi west of Kaupo.	1.91	1963-72≠, 1973-84	12-25-83	5.28	309
16500300	Hawelewele Gulch near Kaupo	Lat 20°38'01", long 156°11'08", 700 ft upstream from Piilani Highway 31 and 3.9 mi west of Kaupo.	11.3	1967-84	3- 2-84	8.77	2,750
16500800	Kukuiula Gulch near Kipahulu	Lat 20°39'18", long 156°04'44", at Highway 31, 1.3 mi west of Kipahulu, and 3.2 mi east of Kaupo.	.76	1963-68≠, 1969-84	3- 2-84	4.84	a60
16502400	Pukuilua Gulch near Hana	Lat 20°42'00", long 156°00'14", at Highway 31, 0.4 mi southwest of Puuiki, and 4.0 mi south of Hana.	.48	1963-84	2- 8-84	2.75	106
16502800	Moomoonui Gulch at Hana	Lat 20°44'37", long 155°59'18", at Highway 31 just downstream from Moomooiki Gulch and 1.0 mi south of Hana.	.90	1963-84	2- 8-84	8.84	442

< Less than.
≠ Operated as a continuous-record gaging station.
a Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi^2	Period of record	Annual Maximum Date	 Gage height (feet)	 Discharge (ft^3/s)
		Hawaii, Island of Maui--Continued					
16502900	Kawaipapa Gulch at Hana	Lat 20°46'08", long 156°00'04", 1,000 ft upstream from Highway 36 and 0.3 mi northwest of Hana Hospital.	5.83	1965-84	2- 8-84	6.29	2,250
16603300	Unnamed gulch at Maliko Bay	Lat 20°56'26", long 156°21'04", at Hana Highway, 0.5 mi west of Maliko Bay, and 1.3 mi north of Hamakuapoko.	.43	1963-84	-	-	No flow
16603700	Kalialinui Gulch tributary near Pukalani	Lat 20°49'02", long 156°19'44", at Lower Kula Road and 1.4 mi south of Pukalani.	1.17	1967-84	-	-	No flow
16603800	Kaluapulani Gulch tributary near Pukalani	Lat 20°48'52", long 156°18'32", at Haleakala Highway, 1.5 mi west of Olinda Prison Camp, and 2.3 mi southeast of Pukalani.	.45	1963-84	12-25-83	1.25	16
16603850	Kalialinui Gulch near Kahului	Lat 20°52'47", long 156°26'06", 600 ft upstream from Hansen Road, 0.5 mi northeast of Puunene Hospital, and 2.5 mi southeast of Kahului Post Office.	17.9	1967-84	-	-	No flow
16607000	Iao Stream at Wailuku	Lat 20°53'38", long 156°30'27", 560 ft upstream from Market Street bridge at Wailuku and 1.9 mi upstream from mouth.	8.24	1951≠, 1952-84	12-25-83	5.05	3,400
16616500	Unnamed gulch at Maluhia Camp	Lat 20°57'26", long 156°31'41", at Kahekili Highway, 0.6 mi east of Maluhia Camp, and 1.8 mi northwest of Waihee.	.12	1964-84	-	-	No flow
16619700	Poelua Gulch near Kahakuloa	Lat 21°00'58", long 156°34'58", at Highway 30 (bypass), 1.3 mi southeast of Nakalele Point lighthouse, and 2.2 mi northwest of Kahakuloa.	1.18	1965-84	3- 2-84	5.41	100
16623400	Honokeana Gulch near Honokahua	Lat 20°59'39", long 156°40'13", at Honoapiilani Highway, 1.1 mi southwest of Honokahua, and 1.1 mi south of Hawea Point.	.59	1964-84	12-25-83	3.73	72
16630200	Honokowai Stream at Honokowai	Lat 20°56'58", long 156°41'07", 0.5 mi southeast of Honokowai, and 1.1 mi northwest of Puukolii.	5.59	1962-63, 1965-84	8-22-84	3.65	297
16643300	Kauaula Stream near mouth, near Lahaina	Lat 20°52'09", long 156°39'43", 0.7 mi upstream from Honoapiilani Highway (bypass) and 1.3 mi southeast of Lahaina Lighthouse.	4.12	1960, 1962, 1964-84	12-25-83	3.64	285
16646200	Olowalu Stream at Olowalu	Lat 20°49'23", long 156°37'15", on downstream side of center pier of plantation road bridge, 0.6 mi northeast of Olowalu, and 5.5 mi southeast of Lahaina.	4.08	1962-72≠, 1973-84	12-25-83	4.44	720
16647500	Malalowaiaole Gulch near Maalaea	Lat 20°46'56", long 156°31'32", at Honoapiilani Highway, 200 ft upstream from mouth, 0.2 mi north of McGregor Point, and 1.2 mi southwest of Maalaea.	.64	1964-84	12-25-83	6.06	95
16650500	Waikapu Stream near Kihei	Lat 20°49'02", long 156°29'00", at railroad bridge beside Lower Maalaea Road, 2.5 mi northeast of Maalaea, and 2.5 mi northwest of Kihei.	6.97	1963-84	12-25-83	7.85	1,080

≠ Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi²	Period of record	Annual Maximum Date	Annual Maximum Gage height (feet)	Annual Maximum Discharge (ft³/s)
		Hawaii, Island of Maui--Continued					
16658500	Waiakoa Gulch tributary near Waiakoa	Lat 20°44'56", long 156°19'22", at Upper Kula Road, 1.0 mi southeast of Waiakoa, and 1.0 mi northeast of junction of Lower and Upper Kula Roads.	0.98	1964-84	12-25-83	1.73	29
16659000	Waiakoa Gulch at Kihei	Lat 20°47'14", long 156°27'41", 0.3 mi northeast of Kihei and 0.4 mi upstream from mouth.	10.1	1963-84	-	-	No flow
16660000	Kulanihakoi Gulch near Kihei	Lat 20°46'06", long 156°27'03", on right bank 0.5 mi northeast of Lihue Cemetery, 0.8 mi upstream from mouth, and 1.3 mi southeast of Kihei.	14.4	1963-70#, 1971-84	-	-	No flow
16663500	Kamaole Gulch at Kamaole	Lat 20°43'36", long 156°27'02", at Kihei Road, 350 ft upstream from mouth, and 0.2 mi south of Kamaole.	4.28	1972-84	12-25-83	2.86	<1
16664000	Liilioholo Gulch at Kamaole	Lat 20°43'04", long 156°26'55", on upstream side of Kihei Road, 300 ft upstream from mouth, and 0.8 mi south of Kamaole.	4.12	1972-84	-	-	No flow
		Hawaii, Island of Hawaii					
16701300	Waiakea Stream at Hilo	Lat 19°42'38", long 155°05'02", 0.3 mi upstream from Kinoole Street bridge and 1.3 mi southeast of Hilo Post Office.	35.8	1966-84	-	-	No flow
16701400	Palai Stream at Hilo	Lat 19°40'56", long 155°04'04", at Highway 11, 300 ft south of Palai Street intersection, and 3.5 mi southeast of Hilo Post Office.	5.08	1965-84	2- 8-84	3.72	249
16717400	Kalaoa Mauka Stream near Hilo	Lat 19°48'07", long 155°06'03", at culvert on Highway 19, 1.0 mi north of Papaikou, and 5.1 mi north of Hilo Post Office.	.24	1963-84	2- 8-84	3.43	38
16717600	Alia Stream near Hilo	Lat 19°50'38", long 155°06'21", on left bank 10 ft downstream from culvert on Highway 19 at Pepeekeo, 2.0 mi south of Honomu, and 8.0 mi north of Hilo.	.58	1962-72#, 1973-84	2- 8-84	3.05	132
16717650	Kapehu Stream near Pepeekeo	Lat 19°51'52", long 155°06'11", at culvert on Highway 19, 1.0 mi southeast of Honomu, 2.2 mi north of Pepeekeo, and 9.4 mi north of Hilo.	1.09	1963-84	8-23-84	6.58	532
16717800	Pohakupuka Stream near Papaaloa	Lat 19°57'20", long 155°11'20", on right bank 200 ft downstream from Highway 19, 2.8 mi northwest of Honohina, and 3.0 mi southwest of Papaaloa.	2.76	1963-80#, 1983-84	2- 8-84	7.04	1,120
16717850	Keehia Gulch near Ookala	Lat 20°01'08", long 155°18'45", at culvert on Highway 19, 1.7 mi west of Ookala, and 4.1 mi southeast of Paauilo.	.62	1963-84	2- 8-84	6.65	293
16717920	Ahualoa Gulch at Honokaa	Lat 20°05'12", long 155°29'17", at Highway 24, 1.1 mi northwest of Honokaa Hospital, and 1.5 mi upstream from mouth.	2.27	1963-84	12-26-83	-	<10

< Less than.
# Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1984--Continued

Station No.	Station name	Location	Drainage area mi²	Period of record	Annual Maximum		
					Date	Gage height (feet)	Discharge (ft³/s)
		Hawaii, Island of Hawaii--Continued					
16717950	Honokaia Gulch tributary near Honokaa	Lat 20°02'58", long 155°32'19", at culvert 4.8 mi southwest of Honokaa Hospital, and 5.5 mi southeast of Kukuihaele.	2.42	1963-84	2- 8-84	4.03	155
16752600	Hapahapai Gulch at Kapaau	Lat 20°14'00", long 155°48'00", at Highway 27, 300 ft east of Kapaau Post Office.	1.52	1963-84	12-26-83	10.86	400
16755800	Luahine Gulch near Waimea	Lat 20°03'11", long 155°44'35", at culvert 5.1 mi northwest of Waimea and 5.7 mi east of Kawaihae.	.32	1963-84	12-26-83	3.90	172
16756500	Keanuiomano Stream near Kamuela	Lat 20°01'48", long 155°42'05", on left bank 150 ft upstream from Highway 25 at Waiaka and 2.0 mi west of Kamuela.	4.3	1964-72#, 1973-84	12-26-83	7.22	1,800
16759040	Paiakuli Reservoir tributary near Waimea	Lat 20°02'16", long 155°38'08", at Highway 19, 2.1 mi west of Puukapu Reservoir, and 2.6 mi northeast of Waimea.	.27	1963-84	12-26-83	5.89	400
16759060	Kamakoa Gulch near Waimea	Lat 19°57'32", long 155°41'02", at bridge, 1.4 mi north of Saddle Road Junction, and 4.5 mi south of Waimea.	50.6	1963-84	12-26-83	2.79	35
16759080	Popoo Gulch near Waikii	Lat 19°52'11", long 155°43'51", at bridge on Highway 19, 2.0 mi north of Keamuku, and 5.2 mi west of Waikii.	33.1	1963-84	12-26-83	-	<200
16759180	Keopu Stream near Kailua	Lat 19°38'54", long 155°58'15", at county road bridge, 1.9 mi east of Kailua, and 2.3 mi northwest of Holualoa Post Office.	2.61	1962, 1965-84	-	-	No flow
16759300	Waiaha Stream at Luawai, near Holualoa	Lat 19°38'12", long 155°55'45", on right bank at Luawai, 1.8 mi northeast of Holualoa School, and 4.2 mi southeast of Honokohau School.	8.74	1961-84	10- 5-83	2.67	50
16762000	Alapai Gulch at Naalehu	Lat 19°04'00", long 155°35'19", at debris catchment outlet of Naalehu Watershed Protection Project and 0.2 mi upstream from Highway 11 at Naalehu.	2.87	1963-84	-	-	No flow
16767000	Ninole Gulch near Punaluu	Lat 19°10'44", long 155°33'46", on right bank 300 ft downstream from forest-reserve boundary, 4.6 mi northwest of Punaluu, and 6.0 mi north of Honuapo.	15.5	1966-82#, 1983-84	8-11-84	3.68	78
16770000	Hionamoa Gulch at Pahala	Lat 19°11'45", long 155°29'11", at bridge, 0.6 mi southwest of Pahala, and 4.1 mi north of Punaluu.	9.41	1963-84	9-27-84	8.07	1,280
16770500	Paauau Gulch at Pahala	Lat 19°12'39", long 155°28'48", on right bank 100 ft downstream from bridge on Wood Valley Road and 0.7 mi north of Pahala.	1.74	1962-79#, 1980-84	9-27-84	3.92	209

< Less than.

# Operated as a continuous-record gaging station.

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1984

Stream	Tributary to	Location	Drainage area mi²	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		Hawaii, Island of Oahu				
Makaha Stream	Pacific Ocean	Lat 21°30'46", long 158°10'24", northeast of Kaneaki Heiau and 4.1 mi northeast of junction of Farrington Highway and Makaha Valley Road.		1981-83	12- 7-83	0.16
					12-27-83	.31
					12-28-83	.35
					12-30-83	.33
					1- 3-84	.21
					1- 6-84	1.86
					1-11-84	.30
					1-19-84	.41
					1-26-84	.22
					2- 3-84	1.34
					2-10-84	.35
					2-17-84	.36
					2-24-84	.31
					3- 1-84	.23
					3- 8-84	.50
					3-15-84	.35
					3-22-84	.26
					3-30-84	.20
Makaha Stream	Pacific Ocean	Lat 21°30'37", long 158°10'46", 1.3 mi northeast of Kaneaki Heiau and 3.7 mi northeast of junction of Farrington Highway and Makaha Valley Road.		1983	12- 7-83	.14
					12-27-83	.27
					12-27-83	.27
					12-28-83	.41
					12-30-83	.32
					1- 3-84	.17
					1- 6-84	1.95
					1-11-84	.40
					1-19-84	.48
					1-26-84	.21
					2- 3-84	1.44
					2-10-84	.35
					2-17-84	.34
					2-24-84	.30
					3- 1-84	.21
					3- 8-84	.60
					3-15-84	.36
					3-22-84	.25
					3-30-84	.19
Makaha Stream	Pacific Ocean	Lat 21°30'33", long 158°10'46", 1.2 mi northeast of Kaneaki Heiau and 3.7 mi northeast of junction of Farrington Highway and Makaha Valley Road.		1983	12- 7-83	.16
					12-27-83	.29
					12-27-83	3.33
					12-28-83	3.39
					12-30-83	3.22
					1- 3-84	2.92
					1- 6-84	3.99
					1-11-84	3.05
					1-19-84	3.03
					1-26-84	2.70
					2- 3-84	3.91
					2-10-84	2.70
					2-17-84	2.73
					2-24-84	2.60
					3- 1-84	2.48
					3- 8-84	2.79
					3-15-84	2.51
					3-22-84	2.38
					3-30-84	.20
Makaha Stream	Pacific Ocean	Lat 21°30'23", long 158°10'56", 0.9 mi northeast of Kaneaki Heiau and 3.4 mi northeast of junction of Farrington Highway and Makaha Valley Road.		1981-83	12- 7-83	.18
					12-27-83	.31
					12-27-83	3.51
					12-28-83	3.41
					12-30-83	3.30
					1- 3-84	3.04
					1- 6-84	4.45
					1-11-84	3.06
					1-19-84	3.07
					1-26-84	2.85
					2-10-84	2.76
					2-17-84	2.75
					2-24-84	2.61
					3- 1-84	2.51
					3- 1-84	2.48
					3- 8-84	2.76
					3-15-84	2.42
					3-22-84	2.26
					3-30-84	.19

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1984

Stream	Tributary to	Location	Drainage area mi²	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		Hawaii, Island of Oahu--Continued				
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'40", long 157°49'17", 1.6 mi east of Hawaiian Memorial Park cemetery, 1.9 mi southeast of Castle High School, and 2.5 mi northeast of Pali Golf Course.			9-20-84 9-27-84	0.13 .14
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'42", long 157°49'13", 1.5 mi east of Hawaiian Memorial Park cemetery, 1.8 mi southeast of Castle High School, and 2.4 mi northeast of Pali Golf Course.			9- 6-84 9-14-84	.27 .40
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'42", long 157°49'10", 1.5 mi east of Hawaiian Memorial Park Cemetery, 1.8 mi southeast of Castle High School, and 2.4 mi northeast of Pali Golf Course.			9- 6-84 9-14-84 9-20-84 9-27-84	.26 .38 .25 .38
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'41", long 157°49'07", 1.4 mi east of Hawaiian Memorial Park cemetery, 1.7 mi southeast of Castle High School, and 2.3 mi northeast of Pali Golf Course.			9- 6-84 9-14-84	.26 .45
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'41", long 157°49'05", 1.4 mi east of Hawaiian Memorial Park cemetery, 1.7 mi southeast of Castle High School, and 2.3 mi northeast of Pali Golf Course.			9- 6-84 9-14-84 9-27-84	.26 .34 .40
		Hawaii, Island of Maui				
East Wailuaiki Stream	Pacific Ocean	Lat 20°47'48", long 156°08'47", at altitude 2,400 ft, 1.9 mi upstream from Hana Highway, and 3 mi southwest of Waichue Bay.			4-25-84	2.91
Unnamed tributary	East Wailuaiki Stream	Lat 20°47'54", long 156°09'03", at altitude 2,480 ft, 1.9 mi upstream from Hana Highway, and 3.1 mi southwest of Waiohue Bay.			4-25-84	.90
Unnamed tributary	East Wailuaiki Stream	Lat 20°48'49", long 156°08'31", at altitude 1,600 ft, 0.7 mi upstream from Hana Highway, and 2 mi southwest of Waiohue Bay.			5-10-84	1.11
West Wailuaiki Stream	Pacific Ocean	Lat 20°47'46", long 156°09'29", at altitude 2,570 ft, on right branch 20 ft upstream from confluence, and 2 mi upstream from station 16518000.			3-21-84	.16
West Wailuaiki Stream	Pacific Ocean	Lat 20°47'47", long 156°09'29", at altitude 2,565 ft 30 ft downstream from left and right branch confluence, and 2 mi upstream from station 16518000.			3-21-84	.69
West Wailuaiki Stream	Pacific Ocean	Lat 20°48'01", long 156°09'18", at altitude 2,400 ft, 1.6 mi upstream from station 16518000, and 3.2 mi southwest of Waiohue Bay.			3-21-84	1.42

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1984

Stream	Tributary to	Location	Drainage area mi^2	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Hawaii, Island of Hawaii				
Kalohawahawa	Hookelekele Stream	Lat 19°43'04", long 155°09'43", 1.7 mi west of Piihonua and 3.4 mi west of Hilo.			5-16-84	15.7
Kawainui	Pacific Ocean	Lat 19°49'19", long 155°06'27", 0.8 mi south of Pepeekeo and 2.4 mi north of Papaikou.			7-24-84 8- 6-84	10.4 55.2
Lower Hamakua ditch below Honokaa diversion at Honokaa		Lat 20°05'12", long 155°28'34", 100 ft below Honokaa diversion and 0.5 mi northwest of Honokaa Hospital.		1964-73	1-11-84	13.0
Honokaa diversion at Honokaa		Lat 20°05'12", long 155°28'36", 0.5 mi northwest of Honokaa Hospital.		1964-73	1-11-84	19.2
Lower Hamakua ditch main weir at Kukuihaele		Lat 20°07'07", long 155°35'09", 0.8 mi west of Kukuihaele School and 1.0 mi northeast of Waipio.		1964-73, 1981	1-11-84	38.1

Water-quality partial-record stations are particular sites where chemical-quality, biological and or sediment data are collected systematically over a period of years for use in hydrologic analyses. A schematic diagram showing water-quality stations in Kamooalii Stream basin, Kaneohe, Oahu is shown in figure 15 and the data are listed in downstream order.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

HAWAII, ISLAND OF OAHU

212329157483101 HOOMALUHIA RES SEC 3-1 NR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAY									
11...	1013	761	.5	171	7.2	25.4	--	8.5	104
11...	1015	761	1.0	170	7.2	25.4	1.6	8.4	103
11...	1016	761	3.0	170	7.2	25.4	--	8.3	101
11...	1018	761	5.0	170	7.2	25.3	1.2	8.3	101
11...	1019	761	7.0	170	7.2	25.3	--	8.3	101
11...	1020	761	8.0	170	7.2	25.2	1.5	8.3	101
11...	1023	761	9.0	171	7.2	25.2	--	8.3	101
SEP									
21...	1025	758	1.0	178	7.6	26.6	--	7.1	89
21...	1030	758	5.0	178	7.6	26.5	--	7.2	90
21...	1035	758	8.5	178	7.6	26.5	--	7.2	90

DATE	TIME	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
MAY							
11...	1015	2	6	.30	.60	.90	.020
11...	1018	<1	<1	.30	.90	1.2	.020
11...	1020	2	6	.30	.90	1.2	.010

212329157483102 HOOMALUHIA RES SEC 3-2 NR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
MAY										
11...	1050	761	.5	170	7.3	25.3	--	8.6	105	--
11...	1052	761	2.0	170	7.3	25.3	1.1	8.5	104	1
11...	1054	761	4.0	170	7.3	25.3	--	8.4	102	--
11...	1055	761	6.0	171	7.3	25.2	1.0	8.4	102	--
11...	1058	761	8.0	170	7.2	25.2	--	8.3	101	--
11...	1100	761	9.0	171	7.2	25.2	1.2	8.4	102	3
11...	1102	761	11.0	172	6.4	24.3	--	4.4	53	--
11...	1105	761	10.0	172	6.6	24.6	1.2	5.7	69	--
SEP										
21...	1050	758	1.0	178	7.5	26.6	1.4	7.2	90	1
21...	1055	758	6.0	178	7.5	26.4	1.1	7.2	90	2
21...	1100	758	10.0	178	7.5	26.4	1.3	7.2	90	5
21...	1105	758	11.0	178	7.5	26.4	--	6.7	84	--
21...	1110	--	--	178	7.5	26.4	--	--	--	--

DATE	TIME	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
MAY											
11...	1105	49	0	6.8	7.8	15	39	.9	1.0	50	6.4
SEP											
21...	1110	54	0	7.6	8.4	15	37	.9	.90	54	6.3

< Actual value is known to be less than the value shown.

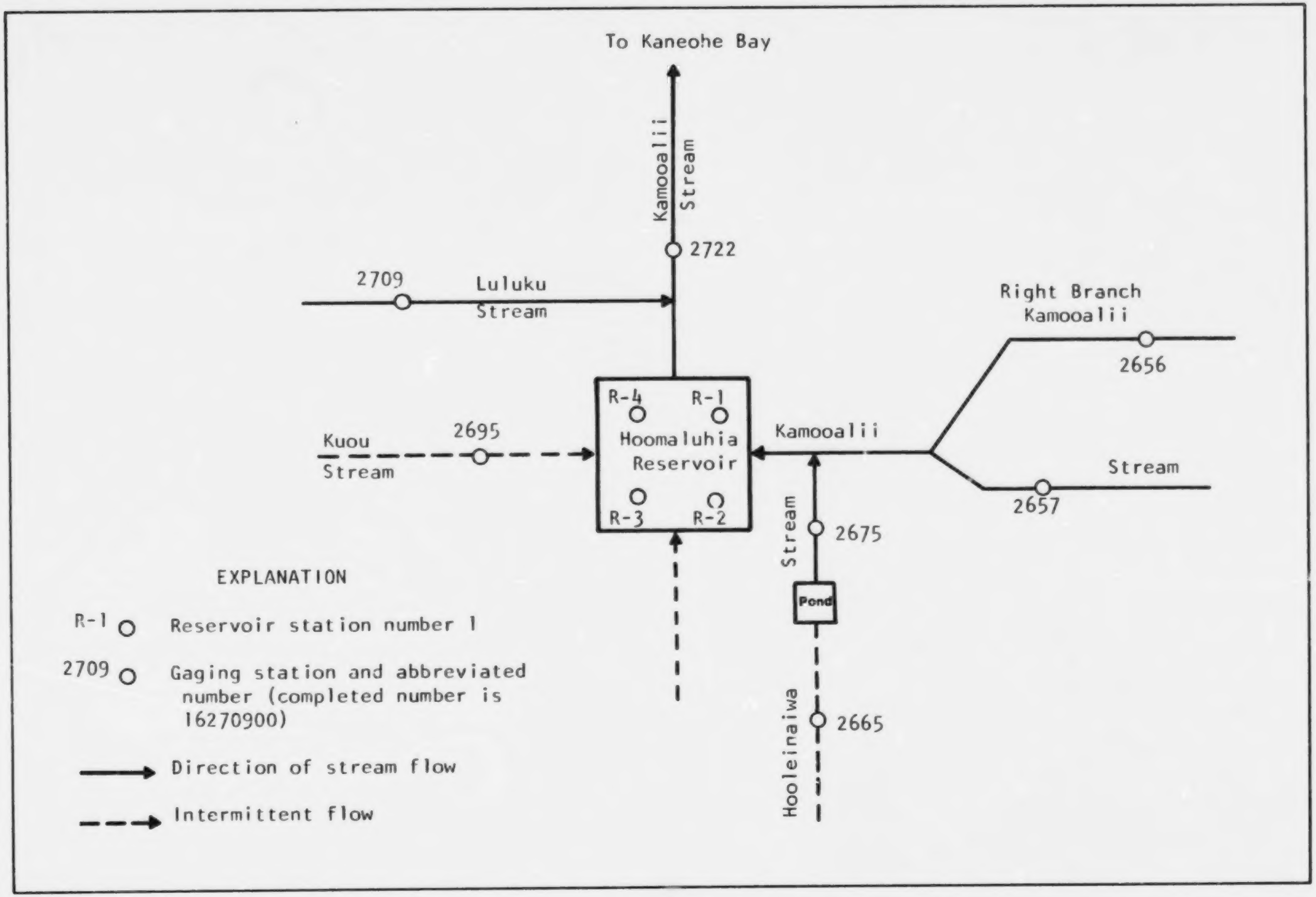
To Kaneohe Bay
Kamooalii Stream
2722
2709
Luluku Stream
Right Branch Kamooalii
2656
R-4
R-1
Hoomaluhia Reservoir
R-3
R-2
Kuou Stream
2695
Kamooalii
Stream
2657
Stream
2675
Pond
Hooleinaiwa
2665
EXPLANATION
R-1 Reservoir station number 1
2709 Gaging station and abbreviated number (completed number is 16270900)
Direction of stream flow
Intermittent flow

Figure 15.--Schematic diagram showing water-quality stations in Kamooalii Stream basin, Kaneohe, Oahu.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

HAWAII, ISLAND OF OAHU--Continued

212329157483102 HOOMALUHIA RES SEC 3-2 NR KANEOHE--Continued

DATE	TIME	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
MAY												
11...	1052	--	--	--	--	--	--	<1	.30	.90	1.2	.020
11...	1055	--	--	--	--	--	--	<1	.30	1.2	1.5	.040
11...	1100	--	--	--	--	--	--	<1	.30	1.0	1.3	.030
11...	1105	19	<.10	22	111	110	.15	--	--	--	--	--
SEP												
21...	1050	--	--	--	--	--	--	10	.20	.60	.80	.010
21...	1055	--	--	--	--	--	--	9	.20	1.7	1.9	.010
21...	1100	--	--	--	--	--	--	7	.10	.50	.60	.010
21...	1110	18	<.10	22	109	110	.15	--	--	--	--	--

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
MAY												
11...	1105	160	20	1	1	<100	10	<10	1.0	1	<1	<10
SEP												
21...	1110	--	60	<1	1	--	10	--	<.5	--	<1	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
MAY												
11...	<1	<1	<3	3	1	250	37	1	<1	10	5	30
SEP												
21...	<1	--	<3	--	2	--	58	--	1	--	<4	--

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
MAY												
11...	9	.1	<.1	<1	<10	<1	4	<1	<1	<1	<1	64
SEP												
21...	40	.1	<.1	--	<10	--	1	<1	<1	--	<1	72

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
MAY											
11...	<6	20	5	3.5	2	<.1	<.010	<.1	<.010	<.010	<.010
SEP											
21...	<6	--	8	2.3	<1	<.1	<.010	<.1	<.010	<.010	<.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

HAWAII, ISLAND OF OAHU--Continued

212329157483102 HOOMALUHIA RES SEC 3-2 NR KANEOHE--Continued

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
MAY											
11...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
SEP											
21...	.02	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY											
11...	<.01	<.01	<.10	<.1	<.01	<1	<.01	.03	<.01	<.01	<.01
SEP											
21...	<.01	<.01	<.10	<.1	<.01	<1	<.01	.04	<.01	<.01	<.01

212329157483103 HOOMALUHIA RES SEC 3-3 NR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY									
11...	1137	761	.5	170	7.3	25.6	--	8.5	104
11...	1138	761	1.0	171	7.3	25.5	.50	8.4	103
11...	1139	761	3.0	170	7.3	25.5	--	8.5	104
11...	1140	761	5.0	171	7.3	25.4	1.0	8.5	104
11...	1141	761	7.0	171	7.3	25.3	--	8.6	105
11...	1143	761	8.0	171	7.3	25.2	--	8.6	105
11...	1145	761	9.0	172	7.1	25.1	1.2	8.2	100
11...	1148	761	11.0	172	6.9	24.9	--	7.2	87
11...	1150	761	12.0	172	6.5	24.3	--	4.7	56
SEP									
21...	1120	758	1.0	178	7.6	26.8	--	7.5	94
21...	1125	758	6.5	178	7.7	26.6	--	7.6	96
21...	1130	758	11.5	179	7.5	26.4	--	6.9	86

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
MAY							
11...	1138	19	<1	.30	.60	.90	.020
11...	1140	--	<1	.30	.80	1.1	.010
11...	1145	--	<1	.30	1.1	1.4	.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

HAWAII, ISLAND OF OAHU--Continued

212331157482501 HOOMALUHIA RES SEC 2-1 NR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAY								
10...	1245	763	.5	171	7.5	25.8	9.0	111
10...	1246	763	1.0	171	7.4	25.7	8.8	108
10...	1247	763	3.0	170	7.4	25.6	8.8	108
10...	1248	763	5.0	171	7.4	25.2	8.8	107
10...	1249	763	7.0	170	7.3	25.1	8.9	108
10...	1250	763	8.0	171	7.3	25.0	8.8	106
10...	1251	763	9.0	170	7.1	24.8	7.3	88
10...	1252	763	9.5	174	6.9	24.4	5.6	67
SEP								
20...	1225	757	1.0	175	8.0	27.1	8.0	101
20...	1230	757	5.0	175	7.9	27.1	7.9	100
20...	1235	757	8.5	176	7.5	26.5	6.3	79

212331157482502 HOOMALUHIA RES SEC 2-2 NR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
MAY									
10...	1302	763	.5	171	7.3	25.6	--	9.0	110
10...	1305	763	1.0	171	7.3	25.5	1.0	8.9	109
10...	1306	763	3.0	171	7.4	25.5	--	8.8	107
10...	1308	763	5.0	171	7.4	25.3	1.2	8.8	107
10...	1309	763	7.0	171	7.4	25.2	--	8.9	108
10...	1310	763	9.0	171	6.8	24.3	6.0	6.9	82
10...	1312	763	11.0	174	6.6	24.0	--	6.8	81
10...	1313	763	8.0	171	7.4	25.1	--	8.8	107
SEP									
20...	1240	757	1.0	176	7.9	27.0	.80	7.9	100
20...	1245	757	6.5	176	7.9	26.8	1.0	7.9	100
20...	1250	757	11.0	180	7.2	25.5	1.1	5.0	62

DATE	TIME	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
MAY							
10...	1305	2	<1	.30	.50	.80	.040
10...	1308	5	<1	.40	.60	1.0	.020
10...	1310	1	30	.40	1.0	1.4	.140
SEP							
20...	1240	13	7	.20	.40	.60	.010
20...	1245	10	4	.20	.50	.70	.020
20...	1250	32	10	.20	.60	.80	.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

HAWAII, ISLAND OF OAHU--Continued

212331157482503 HOOMALUHIA RES SEC 2-3 NR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY								
10...	1325	763	.5	173	7.3	25.6	8.9	109
10...	1326	763	1.0	171	7.2	25.7	8.7	107
10...	1327	763	3.0	171	7.3	25.6	8.7	106
10...	1328	763	5.0	171	7.4	25.6	8.9	109
10...	1329	763	7.0	171	7.4	25.4	8.8	107
10...	1330	763	8.0	172	7.1	24.9	8.1	98
10...	1331	763	9.0	173	6.8	24.5	7.5	90
10...	1332	763	9.5	174	6.7	24.3	7.1	85
SEP								
20...	1255	757	1.0	176	7.9	27.0	8.0	101
20...	1300	757	5.0	176	7.9	26.9	8.0	101
20...	1305	757	8.5	176	7.4	26.3	6.4	80

212335157483001 HOOMALUHIA RES SEC 4-1 NR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY									
11...	1334	761	.5	173	7.3	25.6	--	8.9	109
11...	1335	761	1.0	173	7.3	25.6	.80	8.7	107
11...	1337	761	3.0	173	7.3	25.6	--	8.6	106
11...	1338	761	5.0	173	7.2	25.6	1.0	8.6	106
11...	1340	761	7.0	173	7.2	25.5	1.1	8.5	104
11...	1341	761	8.0	173	7.2	25.5	--	8.4	103
11...	1342	761	9.0	174	6.8	24.8	--	7.1	86
SEP									
21...	1305	758	1.0	179	7.8	27.1	1.1	8.1	103
21...	1310	758	5.0	179	7.8	26.9	1.2	7.8	98
21...	1315	758	10.0	180	7.5	26.6	1.2	6.2	78

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
MAY							
11...	1335	5	1	.30	.60	.90	.020
11...	1338	5	4	.30	.40	.70	.010
11...	1340	5	<1	.30	1.3	1.6	.040
SEP							
21...	1305	1	3	.10	.60	.70	.010
21...	1310	1	5	.20	.50	.70	.010
21...	1315	1	9	.20	.50	.70	.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

HAWAII, ISLAND OF OAHU--Continued

212335157483002 HOOMALUHIA RES SEC 4-2 NR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY									
11...	1315	761	1.0	172	7.2	25.6	1.0	8.6	106
11...	1316	761	3.0	172	7.2	25.6	--	8.5	104
11...	1318	761	5.0	173	7.2	25.6	.80	8.4	103
11...	1319	761	7.0	173	7.2	25.5	--	8.3	102
11...	1320	761	9.0	174	6.9	25.1	1.0	6.9	84
11...	1321	761	10.0	174	6.6	24.7	--	6.2	75
11...	1322	761	8.0	173	7.0	25.2	--	7.9	96
SEP									
21...	1330	758	1.0	179	7.8	26.9	--	7.8	98
21...	1332	758	5.5	179	7.7	26.9	--	7.8	98
21...	1335	758	9.5	179	7.5	26.5	--	6.6	83

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
MAY							
11...	1315	--	<1	.30	1.7	2.0	.040
11...	1318	2	<1	.30	.50	.80	.020
11...	1320	--	<1	.30	.60	.90	.020

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

16228200 MOANALUA STREAM NEAR AIEA (LAT 21°22'37" LONG 157°52'58")

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DIS CHARGE, SUSPENDED (T/DAY)
JAN					JAN				
05...	1100	156	184	78	05...	1530	67	30	5.4
05...	1125	166	188	84	APR				
05...	1510	69	40	7.5	19...	1500	220	818	486

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE (LAT 21°23'22" LONG 157°47'44")

Streamflow and water-quality data for this station are published in pages 80-89.

16265700 KAMOOALII STREAM AT ALTITUDE 200 FT NEAR KANEOHE (LAT 21°23'12" LONG 157°47'56")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARDNESS (MG/L AS CACO3)
OCT											
26...	1245	758	.21	193	8.6	23.0	1.0	9.0	106	K910	--
FEB											
01...	0915	755	.05	192	7.5	22.0	1.1	6.7	78	480	63
APR											
24...	1315	761	E.05	200	6.8	26.0	1.2	6.0	74	--	--

< Actual value is known to be less than the value shown.
E Estimated value.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16265700 KAMOOALII STREAM AT ALTITUDE 200 FT NEAR KANEOHE--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
FEB 01...	0	8.9	9.9	14	32	.8	1.5	64	6.0	21	<.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)
OCT 26...	--	--	--	--	12	.20	.90	1.1	.030	--	--
FEB 01...	20	109	120	.15	2	.20	1.1	1.3	.010	60	<10
APR 24...	--	--	--	--	5	--	--	--	--	--	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
FEB 01...	<1	<1	<100	35	<10	<.5	<1	<1	10	<1	<1

DATE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB 01...	<3	1	2	120	26	<1	<1	<10	5	10	2

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
FEB 01...	<.1	<.1	<1	<10	8	2	<1	<1	<1	<1	98

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
FEB 01...	<6	10	<3	.80	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
FEB 01...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16265700 KAMOOALII STREAM AT ALTITUDE 200 FT NEAR KANEOHE--Continued

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 01...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

16266500 HOOLEINAIWA STREAM AT ALTITUDE 220 FT NEAR KANEOHE (LAT 21°23'06" LONG 157°48'16")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 26...	1330	756	.11	131	6.8	22.5	1.0	6.9	80	88	--
FEB 01...	1015	755	.12	126	6.7	22.0	1.0	7.3	85	50	39
APR 24...	1345	756	.19	120	6.7	25.0	1.0	7.0	86	--	--
JUN 19...	1040	757	.07	128	6.4	23.5	.70	6.6	78	250	39

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB 01...	0	6.5	5.6	11	37	.8	.70	41	5.4	15	<.10
JUN 19...	0	6.5	5.5	11	38	.8	.40	40	3.9	12	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT 26...	--	--	--	--	8	.10	.60	.70	.070	--	--
FEB 01...	20	81	89	.11	<2	.10	<.20	--	<.010	30	10
APR 24...	--	--	--	--	7	--	--	--	--	--	--
JUN 19...	22	72	85	.10	<2	<.10	<.20	--	<.010	50	<10

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
FEB 01...	<1	<1	<100	5	<10	<.5	<1	<1	10	1	4
JUN 19...	<1	<1	<100	5	<10	<1	1	<1	<10	<1	<1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16266500 HOOLEINAIWA STREAM AT ALTITUDE 220 FT NEAR KANEOHE--Continued

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
FEB 01...	<3	2	2	220	58	<1	<1	<10	4	70	42
JUN 19...	<3	3	<1	240	94	<1	<1	<10	<4	50	51

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)
FEB 01...	<.1	<.1	<1	<10	9	1	<1	<1	<1	<1	42
JUN 19...	<.1	<.1	<1	<10	9	4	<1	<1	<1	<1	43

DATE	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
FEB 01...	<6	10	5	.60	--	<.1	<.010	<.1	<.010	<.010	<.010
JUN 19...	<6	10	5	.30	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
FEB 01...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
JUN 19...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 01...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JUN 19...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16267500 HOOLEINAIWA STREAM ABOVE CCNFLUENCE OF KAMOOALII STREAM NEAR KANEOHE (LAT 21°23'15" LONG 157°48'19")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 25...	1230	764	.46	183	7.1	24.5	3.2	6.2	74	46	--
JAN 26...	1320	758	.46	170	6.9	22.5	2.1	6.5	76	K14	59
APR 24...	1135	759	.68	170	6.9	25.5	2.0	6.8	84	--	--
JUN 19...	1140	757	.44	175	6.8	30.0	2.7	5.6	75	100	56

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
JAN 26...	0	10	8.3	14	34	.8	.90	61	5.5	18	<.10
JUN 19...	0	9.5	7.8	15	37	.9	.70	58	4.5	16	<.10

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
OCT 25...	--	--	--	--	10	<.10	.50	--	.020	--	--
JAN 26...	25	112	120	.15	<1	<.10	<.20	--	<.010	60	<10
APR 24...	--	--	--	--	7	--	--	--	--	--	--
JUN 19...	27	110	120	.15	<2	.10	.20	.30	<.010	50	10

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
JAN 26...	<1	<1	<100	7	<10	<.5	<1	<1	<10	<1	<1
JUN 19...	<1	<1	<100	5	<10	<1	<1	<1	<10	<1	<1

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN 26...	<3	2	2	770	220	15	<1	<10	6	130	91
JUN 19...	<3	3	1	910	260	<1	<1	<10	4	90	44

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

16267500 HOOLEINAIWA STREAM ABOVE CONFLUENCE OF KAMOOALII STREAM NEAR KANEOHE--Continued

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)
JAN 26...	<.1	<.1	<1	<10	6	<1	<1	<1	<1	<1	61
JUN 19...	.1	<.1	<1	<10	9	7	<1	<1	<1	<1	60

DATE	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
JAN 26...	<6	10	7	1.3	<1	<.1	<.010	<.1	<.010	<.010	<.010
JUN 19...	<6	360	6	.40	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JAN 26...	.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
JUN 19...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 26...	<.01	<.01	<.10	<.1	<.01	<1	<.01	.02	<.01	<.01	<.01
JUN 19...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

16269500 KUOU STREAM AT ALTITUDE 220 FT NEAR KANEOHE (LAT 21°23'30" LONG 157°48'44")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT 27...	1240	758	.03	224	6.9	22.5	3.8	5.2	61	K18	--
FEB 01...	1110	755	.03	235	6.7	22.5	1.4	5.3	62	74	83
APR 24...	1030	761	E.08	300	6.7	24.0	2.4	5.0	60	--	--

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
FEB 01...	10	17	9.8	16	29	.8	1.2	73	17	22	<.10

< Actual value is known to be less than the value shown.
E Estimated value.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16269500 KUOU STREAM AT ALTITUDE 220 FT NEAR KANEOHE--Continued

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)
OCT 27...	--	--	--	--	9	<.10	.70	--	<.010	--	--
FEB 01...	32	148	160	.20	<2	.10	.20	.30	<.010	50	10
APR 24...	--	--	--	--	12	--	--	--	--	--	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
FEB 01...	1	<1	<100	8	<10	<.5	<1	<1	10	<1	<1

DATE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB 01...	<3	4	2	680	130	<1	<1	<10	8	80	74

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
FEB 01...	<.1	<.1	<1	<10	9	1	<1	<1	<1	<1	92

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
FEB 01...	<6	20	9	.50	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
FEB 01...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 01...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212313157482001 HOOLEINAIWA ST AT ALT 190 FT S3 NR KANEOHE (LAT 21°23'31" LONG 157°48'20")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT									
25...	1020	764	--	180	7.0	23.7	5.0	5.4	64
JAN									
26...	1100	759	1.0	167	6.9	22.3	--	5.7	66
26...	1105	759	2.0	167	6.9	22.3	5.5	5.7	66
26...	1106	759	3.0	167	6.8	22.1	--	5.5	63
26...	1107	759	4.0	167	6.8	21.9	--	5.0	57
26...	1108	759	4.5	168	6.6	21.8	--	3.3	38

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT						
25...	1020	290	15	<.10	.70	.030
JAN						
26...	1105	K20	7	<.10	.20	.010

212314157481901 HOOLEINAIWA ST AT ALT 190 FT S2 NR KANEOHE (LAT 21°23'14" LONG 157°49'19")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT									
25...	1000	764	--	180	6.9	23.5	4.4	6.6	78
JAN									
26...	1050	759	1.0	167	7.1	22.2	--	6.8	78
26...	1120	759	2.0	167	7.1	22.2	3.4	6.6	76
26...	1125	759	3.0	167	7.0	22.1	--	6.6	76
26...	1130	759	4.0	167	7.0	21.8	--	6.5	74

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT												
25...	1000	56	57	0	9.6	8.0	14	34	.8	1.1	58	6.4
JAN												
26...	1120	K16	58	0	9.7	8.1	14	34	.8	.90	60	5.3

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)
OCT												
25...	16	<.10	25	115	120	.16	11	.10	.80	.90	.010	270
JAN												
26...	18	<.10	25	115	120	.16	7	<.10	<.20	--	.020	170

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212314157481901 HOOLEINAIWA ST AT ALT 190 FT S2 NR KANEOHE--Continued

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
OCT 25...	<10	<1	<1	<100	7	10	<.5	<1	<1	10	<1	2
JAN 26...	<10	<1	1	<100	6	<10	<.5	<1	<1	<10	<1	<1

DATE	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT 25...	<3	3	3	770	150	1	2	10	6	110	110
JAN 26...	<3	4	2	860	150	14	<1	<10	6	110	60

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)
OCT 25...	.1	<.1	<1	<10	1	3	<1	<1	<1	<1	60
JAN 26...	<.1	<.1	<1	<10	3	3	<1	<1	<1	<1	60

DATE	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
OCT 25...	<6	110	9	1.6	<1	<.1	<.010	<.1	<.010	<.010	<.010
JAN 26...	<6	20	4	1.6	<1	<.1	<.010	<.1	<.010	<.010	<.010

DATE	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
OCT 25...	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01
JAN 26...	.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 25...	<.01	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JAN 26...	<.01	<.01	<.10	<.1	<.01	<1	<.01	.03	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212329157483101 HOOMALUHIA RES SEC 3-1 NR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN								
25...	1228	760	1.0	189	7.6	22.6	7.6	88
25...	1229	760	3.0	189	7.5	22.4	7.6	88
25...	1231	760	5.0	188	7.5	22.3	7.6	88
25...	1232	760	7.0	188	7.5	22.3	7.6	88
25...	1233	760	8.0	187	7.5	22.4	7.6	88
25...	1235	760	9.0	187	7.5	22.4	7.6	88
JUN								
26...	1110	764	1.0	183	7.5	26.7	7.2	90
26...	1111	764	3.0	183	7.5	26.6	7.0	87
26...	1113	764	5.0	183	7.5	26.5	6.9	86
26...	1114	764	7.0	183	7.5	26.4	6.8	84
26...	1115	764	9.0	183	7.5	26.4	6.7	83

212329157483102 HOOMALUHIA RES SEC 3-2 NR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN										
25...	1200	760	1.0	185	7.4	23.0	1.0	7.3	85	8
25...	1202	760	3.0	185	7.4	23.0	--	7.3	85	--
25...	1204	760	5.0	185	7.4	23.0	--	7.2	84	--
25...	1205	760	6.0	185	7.4	23.0	1.9	7.2	84	6
25...	1206	760	7.0	185	7.4	23.0	--	7.2	84	--
25...	1207	760	8.0	185	7.4	23.0	--	7.2	84	--
25...	1208	760	9.0	185	7.4	23.0	--	7.1	83	--
25...	1210	760	10.0	185	7.4	23.0	1.3	7.0	82	8
25...	1212	760	11.0	185	7.4	23.0	--	7.0	82	--
25...	1215	760	--	185	7.4	23.0	--	7.1	83	--
JUN										
26...	1050	764	1.0	183	7.5	26.5	.70	6.8	84	1
26...	1053	764	3.0	183	7.5	26.5	--	6.8	84	--
26...	1054	764	5.0	183	7.5	26.4	--	6.8	84	--
26...	1055	764	6.0	183	7.5	26.4	1.2	6.7	83	2
26...	1058	764	7.0	183	7.5	26.4	--	6.7	83	--
26...	1059	764	9.0	183	7.4	26.4	--	6.6	82	--
26...	1100	764	10.0	183	7.5	26.3	.70	6.7	83	<1
26...	1135	764	--	183	7.5	26.4	--	6.7	83	--

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN											
25...	1215	56	2	8.7	8.4	15	36	.9	1.2	54	9.0
JUN											
26...	1135	55	0	7.6	8.7	16	38	1	.80	55	7.1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212329157483102 HOOMALUHIA RES SEC 3-2 NR KANEOHE--Continued

DATE	TIME	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
JAN												
25...	1200	--	--	--	--	--	--	3	.30	<.20	--	<.010
25...	1205	--	--	--	--	--	--	4	.30	.20	.50	<.010
25...	1210	--	--	--	--	--	--	3	.30	.30	.60	<.010
25...	1215	19	<.10	20	110	110	.15	--	--	--	--	--
JUN												
26...	1050	--	--	--	--	--	--	3	<.10	.40	--	.010
26...	1055	--	--	--	--	--	--	2	<.10	.60	--	.010
26...	1100	--	--	--	--	--	--	5	<.10	.30	--	.010
26...	1135	19	<.10	21	105	110	.14	--	--	--	--	--

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)
JAN											
25...	1215	90	<10	1	1	<100	10	<10	<.5	<1	<1
JUN											
26...	1135	200	10	<1	<1	<100	11	<10	1.0	<1	<1

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)
JAN										
25...	<10	<1	<1	<3	3	2	160	19	10	<1
JUN										
26...	30	<1	2	<3	6	5	200	12	<1	<1

DATE	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)
JAN										
25...	<10	6	30	4	.4	<.1	<1	<10	4	2
JUN										
26...	--	<4	10	5	.1	<.1	24	<10	7	1

DATE	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)
JAN										
25...	<1	<1	<1	<1	76	<6	10	5	1.7	<1
JUN										
26...	<1	<1	<1	<1	75	<6	30	4	2.5	I

DATE	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)
JAN										
25...	<.1	<.010	<.1	<.010	<.010	<.010	.01	<.010	<.010	<.010
JUN										
26...	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010	<.010	<.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212329157483102 HOOMALUHIA RES SEC 3-2 NR KANEOHE--Continued

DATE	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)
JAN										
25...	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01	<.01	<.10
JUN										
26...	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01	<.01	<.10

DATE	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN								
25...	<.1	<.01	<1	<.01	.05	<.01	<.01	<.01
JUN								
26...	<.1	<.01	<1	<.01	.02	<.01	<.01	<.01

212329157483103 HOOMALUHIA RES SEC 3-3 NR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN								
25...	1156	760	1.0	184	7.6	23.0	7.4	87
25...	1157	760	3.0	185	7.5	23.0	7.3	85
25...	1158	760	5.0	185	7.5	23.0	7.2	84
25...	1159	760	7.0	185	7.4	23.0	7.1	83
25...	1200	760	8.0	185	7.4	23.0	7.0	82
25...	1201	760	9.0	185	7.4	22.9	7.0	82
25...	1202	760	10.0	185	7.4	22.9	6.9	81
25...	1203	760	11.0	185	7.4	22.9	6.9	81
25...	1204	760	12.0	185	7.4	22.9	6.9	81
JUN								
26...	1037	764	1.0	184	7.5	26.4	6.8	84
26...	1039	764	3.0	184	7.5	26.4	6.8	84
26...	1040	764	5.0	184	7.5	26.4	6.8	84
26...	1041	764	7.0	184	7.5	26.3	6.7	83
26...	1043	764	9.0	184	7.5	26.2	6.7	83
26...	1044	764	11.0	184	7.4	26.1	6.5	80
26...	1045	764	12.0	184	7.3	26.1	6.1	75

212331157482501 HOOMALUHIA RES SEC 2-1 NR KANEOHE (LAT 21°23'31" LONG 157 48'25")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN								
25...	1127	761	1.0	185	7.5	23.0	7.5	88
25...	1128	761	3.0	185	7.4	23.0	7.2	84
25...	1129	761	5.0	185	7.3	23.0	7.1	83
25...	1130	761	7.0	185	7.4	23.0	7.3	85
25...	1131	761	8.0	185	7.4	22.9	7.1	83
25...	1132	761	9.0	184	7.4	22.9	7.0	82
JUN								
25...	1355	765	1.0	182	7.6	26.9	7.1	89
25...	1357	765	3.0	182	7.6	26.9	7.1	89
25...	1358	765	5.0	182	7.6	26.7	7.1	88
25...	1359	765	7.0	181	7.4	26.4	6.7	83
25...	1401	765	9.0	183	7.1	25.9	5.8	71

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212331157482502 HOOMALUHIA RES SEC 2-2 NR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN									
25...	1115	761	1.0	186	7.4	23.0	1.5	7.1	83
25...	1116	761	3.0	185	7.4	23.0	--	7.0	82
25...	1118	761	5.0	185	7.4	23.0	--	7.0	82
25...	1120	761	6.0	185	7.4	22.9	1.3	7.0	82
25...	1121	761	7.0	185	7.4	22.9	--	7.0	82
25...	1122	761	8.0	185	7.4	22.9	--	7.0	82
25...	1123	761	9.0	185	7.3	22.9	--	6.9	80
25...	1124	761	10.0	185	7.3	22.9	--	6.9	80
25...	1125	761	11.0	186	7.4	23.0	1.7	6.9	81
25...	1126	761	12.0	185	7.3	22.9	--	6.8	79
JUN									
25...	1340	765	1.0	182	7.5	26.9	.70	7.1	89
25...	1342	765	3.0	182	7.5	26.8	--	7.0	87
25...	1344	765	5.0	182	7.5	26.6	--	7.1	88
25...	1345	765	6.0	182	7.5	26.5	.70	7.1	88
25...	1346	765	7.0	182	7.4	26.3	--	5.8	84
25...	1348	765	9.0	182	7.3	25.9	--	6.3	77
25...	1350	765	11.0	187	6.8	25.4	.70	3.4	41

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
JAN							
25...	1115	17	3	.40	.20	.60	<.010
25...	1120	23	3	.40	.20	.60	.010
25...	1125	8	4	.30	.20	.50	<.010
JUN							
25...	1340	3	7	.10	.60	.70	.010
25...	1345	1	5	.10	.40	.50	.010
25...	1350	6	10	.10	.70	.80	.020

212331157482503 HOOMALUHIA RES SEC 2-3 NR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN								
25...	1107	761	1.0	185	7.5	23.0	7.2	84
25...	1108	761	3.0	185	7.5	23.0	7.1	83
25...	1109	761	5.0	185	7.4	23.0	7.1	83
25...	1110	761	7.0	185	7.4	23.0	7.0	82
25...	1111	761	8.0	185	7.4	22.9	7.0	82
25...	1112	761	9.0	185	7.3	22.9	7.0	82
JUN								
25...	1330	765	1.0	182	7.5	26.9	7.0	87
25...	1331	765	3.0	182	7.5	26.8	7.0	87
25...	1333	765	5.0	182	7.3	26.7	7.0	87
25...	1335	765	7.0	182	7.4	26.2	6.6	81
25...	1336	765	9.0	182	7.2	25.9	6.0	74

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212335157482601 HOOMALUHIA RES SEC 1-1 NR KANEOHE (LAT 21°23'35" LONG 157°48'26")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH LAB (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
JAN										
24...	1030	761	1.0	186	7.5	22.9	1.5	7.3	85	18
24...	1032	761	3.0	185	7.4	22.8	--	7.1	83	--
24...	1035	761	5.0	186	7.4	22.8	1.6	7.3	85	4
24...	1037	761	7.0	185	7.4	22.8	--	7.0	81	--
24...	1038	761	8.0	186	7.4	22.8	--	7.0	81	--
24...	1040	761	9.0	185	7.4	22.8	1.7	6.8	79	3
24...	1050	761	--	185	7.4	22.8	--	7.0	81	--
25...	1105	765	1.0	182	7.4	26.4	.60	7.1	88	1
25...	1108	765	3.0	183	7.4	26.1	--	7.0	86	--
25...	1110	765	5.0	183	7.5	26.0	.80	7.0	86	5
25...	1113	765	7.0	183	7.6	25.9	--	7.0	86	--
25...	1115	765	9.0	183	7.5	25.8	1.4	6.7	82	4
25...	1125	765	--	183	7.5	26.0	--	--	--	--

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN											
24...	1050	55	2	8.5	8.3	15	37	.9	.90	54	8.8
JUN											
25...	1125	55	1	7.6	8.8	16	38	1	.90	54	7.2

DATE	TIME	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
JAN											
24...	1030	--	--	--	--	--	--	3	.30	<.20	<.010
24...	1035	--	--	--	--	--	--	3	.30	<.20	.010
24...	1040	--	--	--	--	--	--	3	.30	<.20	<.010
24...	1050	18	<.10	20	110	110	.15	--	--	--	--
JUN											
25...	1105	--	--	--	--	--	--	3	<.10	.50	.020
25...	1110	--	--	--	--	--	--	<2	<.10	.60	.010
25...	1115	--	--	--	--	--	--	11	<.10	.40	.020
25...	1125	19	<.10	21	107	110	.15	--	--	--	--

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)
JAN											
24...	1050	150	<10	<1	<1	<100	12	<10	<.5	<1	<1
JUN											
25...	1125	210	10	<1	<1	<100	5	<10	1.0	<1	2

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212335157482601 - HOOMALUHIA RES SEC 1-1 NR KANEOHE--Continued

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)
JAN 24...	<10	<1	<1	<3	3	3	240	19	14	<1
JUN 25...	<10	<1	<10	<3	3	3	310	12	<1	<1

DATE	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)
JAN 24...	<10	6	30	6	<.1	<.1	<1	<10	5	1
JUN 25...	<10	<4	40	3	.2	<.1	<1	<10	7	<1

DATE	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)
JAN 24...	<1	<1	<1	<1	75	<6	10	<3	2.1	<1
JUN 25...	<1	<1	<1	<1	74	<6	<10	9	2.3	<1

DATE	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)
JAN 24...	<.1	<.010	<.1	<.010	<.010	<.010	.01	<.010	<.010	<.010
JUN 25...	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010	<.010	<.010

DATE	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)
JAN 24...	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01	<.01	<.10
JUN 25...	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01	<.01	<.10

DATE	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 24...	<.1	<.01	<1	<.01	.04	<.01	<.01	<.01
JUN 25...	<.1	<.01	<1	<.01	.04	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212335157482602 HOOMALUHIA RES SEC 1-2 NR KANEOHE (LAT 21°23'35" LONG 157°48'26")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN								
24...	1020	761	1.0	186	7.5	23.0	7.5	88
24...	1021	761	3.0	186	7.5	23.0	7.5	88
24...	1022	761	5.0	186	7.4	23.0	7.5	88
24...	1023	761	7.0	186	7.4	23.0	7.4	86
24...	1024	761	8.0	186	7.5	23.0	7.3	85
24...	1025	761	9.0	186	7.4	23.0	7.2	84
JUN								
25...	1053	765	1.0	182	7.6	26.4	7.1	88
25...	1054	765	3.0	183	7.6	26.1	7.0	86
25...	1055	765	5.0	183	7.6	25.9	6.7	82
25...	1057	765	7.0	182	7.6	25.8	6.6	81
25...	1100	765	9.0	182	7.5	25.8	6.6	81

212335157482603 HOOMALUHIA RES SEC 1-3 NR KANEOHE (LAT 21°23'35" LONG 157°48'26")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN									
24...	1005	761	1.0	186	7.4	23.0	1.0	7.3	85
24...	1007	761	3.0	187	7.4	23.0	--	7.5	88
24...	1008	761	5.0	187	7.4	23.0	--	7.3	85
24...	1010	761	7.0	187	7.4	23.0	1.4	7.2	84
24...	1011	761	8.0	187	7.4	23.0	--	7.2	84
24...	1012	761	9.0	187	7.4	23.0	--	7.0	82
24...	1013	761	10.0	187	7.4	23.0	--	6.8	79
24...	1014	761	11.0	187	7.4	23.0	--	6.7	78
24...	1015	761	12.0	187	7.3	23.0	1.3	6.7	78
JUN									
25...	1025	765	1.0	183	7.6	26.3	.90	7.1	88
25...	1026	765	3.0	183	7.5	26.2	--	7.1	88
25...	1028	765	5.0	183	7.6	26.1	--	6.9	85
25...	1030	765	7.0	183	7.3	25.8	1.2	5.8	71
25...	1031	765	8.0	183	7.4	25.8	--	6.0	73
25...	1033	765	9.0	183	7.3	25.7	--	5.6	68
25...	1034	765	11.0	186	7.1	25.4	--	4.1	50
25...	1035	765	12.0	187	7.0	25.1	2.3	3.4	41
25...	1036	765	13.0	188	6.9	25.0	--	2.6	31

DATE	TIME	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
JAN							
24...	1005	19	5	.40	<.20	--	<.010
24...	1010	13	2	.40	<.20	--	<.010
24...	1015	23	<1	.40	.70	1.1	.010
JUN							
25...	1025	2	11	.10	.40	.50	.010
25...	1030	1	12	.10	.40	.50	.020
25...	1035	7	13	.20	.40	.60	.020

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212335157483001 HOOMALUHIA RES SEC 4-1 NR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN									
25...	1340	759	1.0	184	7.5	23.0	1.9	7.4	87
25...	1343	759	3.0	184	7.5	23.0	--	7.3	86
25...	1345	759	5.0	184	7.5	23.0	1.6	7.4	87
25...	1348	759	7.0	185	7.5	23.0	--	7.3	86
25...	1350	759	8.0	185	7.5	23.0	1.3	7.2	84
25...	1352	759	9.0	185	7.4	23.0	--	7.0	82
JUN									
26...	1355	764	1.0	184	7.6	27.0	1.1	7.1	89
26...	1356	764	3.0	184	7.6	27.0	--	7.1	89
26...	1400	764	5.0	183	7.6	26.9	2.6	7.1	89
26...	1403	764	7.0	184	7.6	26.7	--	6.8	85
26...	1405	764	8.0	184	7.5	26.4	1.0	6.8	84

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
JAN							
25...	1340	4	3	.30	<.20	--	.010
25...	1345	5	3	.30	.30	.60	.010
25...	1350	4	3	.30	<.20	--	<.010
JUN							
26...	1355	<1	8	<.10	.50	--	.010
26...	1400	1	16	<.10	.80	--	.010
26...	1405	<1	6	<.10	.40	--	.010

212335157483002 HOOMALUHIA RES SEC 4-2 NR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN								
25...	1334	759	1.0	185	7.5	23.0	7.5	86
25...	1335	759	3.0	185	7.5	23.0	7.3	86
25...	1336	759	5.0	185	7.4	23.0	7.2	84
25...	1337	759	7.0	185	7.4	23.0	7.2	84
25...	1338	759	8.0	185	7.4	23.0	7.2	84
25...	1339	759	9.0	185	7.4	23.0	7.2	84
25...	1340	759	10.0	185	7.4	22.9	7.2	84
JUN								
26...	1341	764	1.0	184	7.7	26.9	7.0	88
26...	1343	764	3.0	184	7.6	26.9	7.1	89
26...	1345	764	5.0	184	7.6	26.8	7.1	89
26...	1347	764	7.0	184	7.6	26.5	7.1	88
26...	1350	764	9.0	183	7.6	26.4	6.9	86
26...	1351	764	10.0	184	7.5	26.3	6.8	84

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212335157483003 HOOMALUHIA RES SEC 4-3 NR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN									
25...	1320	759	1.0	185	7.4	23.0	1.6	7.6	89
25...	1322	759	3.0	185	7.5	23.0	--	7.4	87
25...	1323	759	5.0	185	7.5	23.0	--	7.3	86
25...	1325	759	6.0	185	7.5	23.0	1.2	7.3	86
25...	1326	759	7.0	185	7.5	23.0	--	7.3	86
25...	1327	759	8.0	185	7.5	23.0	--	7.3	86
25...	1328	759	9.0	185	7.4	23.0	--	7.3	86
25...	1329	759	10.0	185	7.4	23.0	--	7.3	86
25...	1330	759	11.0	185	7.4	22.9	1.6	7.2	84
25...	1331	759	12.0	185	7.4	22.9	--	7.0	82
JUN									
26...	1315	764	1.0	185	7.5	26.8	1.3	7.1	89
26...	1317	764	3.0	184	7.6	26.8	--	7.1	89
26...	1319	764	5.0	184	7.6	26.7	--	7.2	90
26...	1320	764	6.0	184	7.6	26.6	1.0	7.1	88
26...	1321	764	7.0	184	7.6	26.6	--	7.1	88
26...	1322	764	9.0	184	7.5	26.4	--	6.6	82
26...	1323	764	10.0	184	7.4	26.1	--	6.3	78
26...	1324	764	11.0	184	7.3	26.1	--	6.0	74
26...	1325	764	12.0	185	7.3	26.1	6.7	6.0	74

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
JAN							
25...	1320	4	3	.30	<.20	--	<.010
25...	1325	6	3	.30	.20	.50	<.010
25...	1330	3	4	.30	.40	.70	<.010
JUN							
26...	1315	<1	7	<.10	.30	--	.010
26...	1320	<1	22	<.10	.30	--	.010
26...	1325	2	31	.10	.40	.50	.020

16270900 LULUKU STREAM AT ALTITUDE 220 FT NEAR KANEOHE (LAT 21°23'42" LONG 157°48'46")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS (MG/L AS CACO3)
OCT											
27...	1215	758	.20	158	8.3	22.5	.90	9.8	113	76	--
FEB											
01...	1210	755	.25	159	7.0	21.0	1.4	7.7	88	170	49
APR											
20...	1210	--	.77	160	7.1	21.0	--	--	--	--	--
24...	1010	761	.33	160	6.9	22.5	1.0	7.4	86	--	--
JUN											
20...	1015	759	.17	157	6.9	22.5	.60	7.1	82	460	48
JUL											
10...	1000	757	.25	155	6.9	22.5	1.0	6.8	79	2500	--
AUG											
14...	1145	--	.13	155	7.1	23.0	--	--	--	--	--
SEP											
14...	1120	--	.09	165	7.0	23.0	--	--	--	--	--
18...	1240	760	.15	155	7.4	24.5	.90	7.1	85	1000	--
20...	1120	--	.10	165	6.8	22.5	--	--	--	--	--
27...	1035	--	.11	160	6.9	22.5	--	--	--	--	--

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16270900 LULUKU STREAM AT ALTITUDE 220 FT NEAR KANEOHE--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
FEB 01...	0	9.2	6.3	13	36	.8	1.2	51	4.7	18	<.10
JUN 20...	3	9.3	6.1	13	36	.8	.90	45	3.5	15	.10

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)
OCT 27...	--	--	--	--	10	<.10	.60	.290	--	--	--
FEB 01...	27	101	110	.14	2	.20	<.20	.010	80	20	2
APR 24...	--	--	--	--	<2	--	--	--	--	--	--
JUN 20...	28	95	100	.13	<2	<.10	<.20	.010	50	<10	<1
JUL 10...	--	--	--	--	<2	<.10	.40	.010	--	--	--
SEP 18...	--	--	--	--	11	<.10	.20	.020	--	--	--

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)
FEB 01...	1	<100	5	<10	<.5	<1	<1	10	1	<1	<1
JUN 20...	<1	<100	5	<10	<1	<1	<1	<10	1	<1	<3

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
FEB 01...	5	<1	150	25	4	<1	<10	7	10	6	<.1
JUN 20...	3	<1	200	20	<1	2	<10	<4	60	7	<.1

DATE	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)
FEB 01...	<.1	<1	<10	3	5	<1	<1	<1	<1	55	<6
JUN 20...	<.1	<1	<10	9	<1	<1	<1	<1	<1	53	<6

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WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16270900 LULUKU STREAM AT ALTITUDE 220 FT NEAR KANEOHE--Continued

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
FEB 01...	10	<3	.90	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01
JUN 20...	140	4	.60	1	<.1	<.010	<.1	<.010	<.010	<.010	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB 01...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
JUN 20...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 01...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JUN 20...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE (LAT 21°23'47" LONG 157°48'23")

Streamflow and water-quality data for this station are published in pages 90-95.

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212604158012700 DRAIN A NEAR MILILANI TOWN (LAT 21°26'04" LONG 158°01'27")

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TUR-BID-ITY (NTU)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
JAN												
14...	1415	30	194	--	110	260	156	.21	466	<10	800	1.0
14...	1420	38	129	--	35	220	98	.13	486	<10	700	.4
14...	1426	66	85	--	80	130	--	--	518	<10	800	.6
FEB												
01...	1835	30	102	--	45	160	62	.08	430	<10	400	<.1
14...	0820	38	219	--	2.4	<10	176	.24	11	<10	<100	.1
14...	0835	15	72	--	23	50	47	.06	128	<10	200	<.1
MAR												
02...	0040	10	94	7.7	85	140	60	.08	467	<10	500	.2
02...	0050	22	88	7.7	150	180	56	.08	1400	<10	800	.4
02...	0155	30	88	9.0	50	130	--	--	606	<10	300	.5
02...	0200	22	61	7.9	40	92	--	--	383	<10	400	.1
02...	0315	22	57	8.5	100	130	40	.05	617	<10	900	.3
02...	0320	22	55	8.3	100	100	39	.05	580	<10	600	.2
02...	0400	15	36	7.4	9.3	13	23	.03	24	<10	<100	<.1
04...	0735	30	54	--	25	44	39	.05	105	<10	100	<.1
11...	1410	15	179	--	160	--	--	--	3000	<10	1200	.8
11...	1415	22	147	--	130	--	114	.16	1600	<10	600	.4
11...	1425	15	113	--	75	120	85	.12	651	<10	300	.4
11...	1455	22	71	--	120	110	62	.08	715	<10	200	.2
APR												
09...	0850	5.0	134	--	50	160	86	.12	614	<10	600	<.1
10...	0315	2.0	108	--	21	170	63	.09	514	<10	700	.1
25...	1140	38	73	--	38	130	55	.07	521	<10	400	.1
25...	1205	10	55	--	21	46	41	.06	145	<10	200	.1
26...	1345	30	89	--	29	80	59	.08	362	<10	300	.2
26...	1353	56	64	--	28	73	47	.06	340	<10	500	.1
26...	1600	22	49	--	18	17	37	.05	21	<10	<100	.1
MAY												
23...	0555	22	93	--	55	130	50	.07	381	<10	400	<.1

212553158011000 DRAIN B NEAR MILILANI TOWN (LAT 21°25'53" LONG 158°01'10")

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TUR-BID-ITY (NTU)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
DEC											
24...	1855	39	86	34	300	80	.11	722	<10	1200	.2
24...	1910	22	51	22	46	38	.05	155	<10	200	.1
JAN											
14...	1435	39	52	32	110	33	.04	238	<10	400	.2
14...	1450	28	41	25	37	30	.04	114	<10	200	.1
14...	1505	11	43	25	28	48	.07	64	<10	100	.1
APR											
25...	1150	25	50	24	74	--	--	232	<10	200	.2
26...	1400	25	49	22	84	--	--	213	<10	300	.1
26...	1415	51	40	21	38	--	--	283	<10	300	.1
26...	1430	68	44	35	41	--	--	161	<10	100	.1
26...	1445	63	43	31	15	--	--	100	<10	100	.1
26...	1500	46	47	31	60	30	.04	76	<10	<100	.1
26...	1515	22	52	30	29	--	--	46	<10	<100	<.1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI

16010000 - KAWAIKOI STREAM NR WAIMEA, KAUAI, HI (LAT 22 08 09 LONG 159 37 22)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
NOV , 1983 04...	1255	13	32	6.0	17.0	APR , 1984 09...	1125	73	42	5.8	16.0
DEC 22...	1125	8.5	32	6.1	11.0	MAY 29...	1205	4.7	38	5.8	19.0
FEB , 1984 23...	1225	6.0	31	6.4	17.0	JUL 27...	1205	2.9	48	6.2	18.5

16036000 - MAKAWELI RIVER NR WAIMEA, KAUAI, HI (LAT 21 58 31 LONG 159 38 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
NOV , 1983 07...	1030	18	72	7.1	21.0	MAR , 1984 28...	0940	14	140	7.8	21.0
DEC 19...	1400	22	110	6.8	18.0	MAY 24...	1450	38	87	7.6	24.0
FEB , 1984 27...	1010	19	120	7.5	19.5	JUL 19...	1020	9.6	98	7.6	27.0

16049000 - HANAPEPE RIVER BL MANUAHI STR NR ELEELE, KAUAI, HI (LAT 21 57 29 LONG 159 33 13)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
NOV , 1983 08...	1030	28	125	7.8	21.0	MAR , 1984 30...	1020	15	110	7.7	21.0
DEC 19...	0950	25	116	7.1	17.5	MAY 24...	1115	17	130	8.4	22.5
FEB , 1984 24...	1015	35	100	7.6	19.0	JUL 02...	1030	17	130	7.6	22.5

16060000 - SF WAILUA RIVER NR LIHUE, KAUAI, HI (LAT 22 02 24 LONG 159 22 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 05...	0920	23	95	7.3	20.0	APR , 1984 02...	1400	5.6	110	7.8	22.0
NOV 03...	1400	7.4	120	7.3	24.5	MAY 03...	1445	9.5	95	7.3	22.0
DEC 01...	1330	5.5	130	6.8	24.0	JUN 04...	1425	6.0	130	7.6	22.0
JAN , 1984 03...	1355	3.5	120	7.0	22.5	JUL 03...	1405	3.2	130	7.3	25.0
FEB 03...	1220	7.9	70	7.6	20.5	AUG 02...	1420	2.5	95	7.6	23.0
						30...	1210	3.1	110	7.4	22.5
MAR 02...	1430	80	95	7.2	18.5						

16061000 - NORTH WAILUA DITCH NR LIHUE, KAUAI, HI (LAT 22 03 56 LONG 159 28 14)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 04...	1435	26	68	7.5	20.0	APR , 1984 03...	1325	18	70	7.8	20.0
NOV 01...	1300	21	70	7.2	20.0	MAY 02...	1415	18	72	7.8	21.0
DEC 02...	1235	18	75	7.4	22.0	JUN 01...	1400	16	72	7.4	20.0
JAN , 1984 05...	0930	30	52	6.6	18.0	JUL 02...	1205	18	70	7.8	21.5
FEB 01...	1510	27	65	7.5	20.0	AUG 01...	1350	14	68	7.7	22.0
						31...	1220	16	69	7.1	21.5
MAR 01...	1350	17	70	8.1	18.5						

16061200 - N WAILUA DITCH BL WAIKOKO STR NR LIHUE, KAUAI, HI (LAT 22 03 34 LONG 159 28 00)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 24...	1120	28	80	6.5	19.5	MAY , 1984 21...	1050	18	68	7.3	21.0
DEC 20...	1040	18	77	7.5	18.0	JUN 20...	1125	25	68	7.4	21.0
JAN , 1984 26...	1100	25	70	6.8	18.5	JUL 20...	1130	18	80	7.3	21.0
FEB 21...	1050	25	75	7.6	20.0	AUG 20...	1130	16	80	7.3	22.0
MAR 20...	1210	18	64	7.4	20.0	SEP 24...	1145	17	80	7.3	21.5
APR 20...	1120	27	62	7.4	21.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16062000 - STABLE STORM DITCH NR LIHUE, KAUAI, HI (LAT 22 04 09 LONG 159 26 46)											
OCT , 1983 20...	1105	.12	50	7.7	22.0	APR , 1984 20...	0930	44	72	7.4	21.0
NOV 22...	0910	.42	72	6.7	20.0	MAY 21...	0920	28	75	7.2	20.5
DEC 20...	0910	22	86	7.6	18.0	JUN 20...	0920	23	82	7.1	21.0
JAN , 1984 20...	0945	28	78	6.8	20.5	JUL 20...	0840	26	88	7.4	21.0
FEB 21...	0900	.11	86	7.6	20.0	AUG 20...	0940	21	85	7.3	22.0
MAR 20...	0925	21	80	7.3	19.0	SEP 24...	1015	23	85	7.4	21.5
16063000 - NF WAILUA RIVER AT ALT 650 FT NR LIHUE, KAUAI, HI (LAT 22 04 02 LONG 159 26 21)											
OCT , 1983 05...	1225	30	65	7.3	20.0	APR , 1984 03...	1005	5.0	88	7.8	20.0
NOV 03...	1115	53	74	7.1	19.5	MAY 03...	1210	14	75	7.1	21.0
DEC 02...	1045	3.7	85	7.4	21.5	JUN 04...	1035	1.9	95	7.6	20.5
JAN , 1984 03...	1210	3.4	95	6.7	19.0	JUL 05...	1100	4.2	98	7.6	22.0
FEB 03...	1030	43	80	7.6	17.0	AUG 02...	1010	2.8	78	7.4	22.0
						30...	0950	1.6	85	7.0	22.0
MAR 02...	1045	8.4	75	7.9	18.0						
16068000 - EB OF NF WAILUA RIVER NR LIHUE, KAUAI, HI (LAT 22 04 19 LONG 159 25 05)											
OCT , 1983 26...	1000	36	93	6.9	21.0	APR , 1984 25...	1045	25	105	7.4	21.0
NOV 23...	1030	25	92	6.7	21.5	MAY 25...	0935	21	76	7.1	20.5
DEC 23...	0915	14	102	6.7	16.5	JUN 26...	1005	16	78	7.1	21.5
JAN , 1984 26...	0910	44	94	7.3	20.0	JUL 26...	0920	12	78	7.4	22.0
FEB 28...	0905	15	110	7.5	18.5	AUG 28...	1015	11	110	7.3	22.5
MAR 27...	1015	11	112	7.6	21.0	SEP 27...	0850	35	83	7.5	21.0
16069000 - WAILUA DITCH NR KAPAA, KAUAI, HI (LAT 22 04 34 LONG 159 24 04)											
OCT , 1983 20...	0915	28	90	7.2	23.0	APR , 1984 20...	1410	29	105	7.2	22.0
NOV 22...	1355	27	87	7.3	21.5	MAY 21...	1410	20	95	7.4	22.0
DEC 20...	1430	17	80	7.3	19.0	JUN 20...	1410	25	102	7.4	23.0
JAN , 1984 20...	1415	22	87	7.0	22.5	JUL 20...	1320	14	110	7.6	23.0
FEB 21...	1320	43	95	7.6	20.0	AUG 20...	1355	8.7	125	7.4	23.0
MAR 20...	1420	16	110	7.5	21.0	SEP 21...	1350	21	92	7.4	29.0
16071000 - NF WAILUA RIVER NR KAPAA, KAUAI, HI (LAT 22 03 08 LONG 159 22 22)											
NOV , 1983 15...	1000	11	110	7.3	22.0	APR , 1984 12...	0930	38	78	7.2	21.5
DEC 21...	0935	5.2	150	7.0	17.5	MAY 30...	1000	5.5	130	7.4	23.5
FEB , 1984 28...	1015	6.5	140	7.8	22.0	AUG 03...	1025	3.5	135	7.4	23.5

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WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI--Continued

16071500 - LEFT BRANCH OPAEKAA STREAM NR KAPAA, KAUAI, HI (LAT 22 04 44 LONG 159 23 55)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983 21...	0945	1.9	90	6.9	22.5	MAR , 1984 26...	0930	.65	110	7.2	21.5
DEC 12...	0925	1.1	100	6.9	20.0	MAY 23...	0940	.91	102	6.9	22.5
FEB , 1984 10...	0930	1.0	97	7.3	20.0	JUL 26...	1220	.55	105	7.4	24.0

16077000 - MAKALEHA DITCH NR KEALIA, KAUAI, HI (LAT 22 07 06 LONG 159 22 04)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983 20...	1100	22	56	6.9	22.0	APR , 1984 20...	1110	10	78	6.8	21.0
NOV 23...	0905	10	93	6.8	19.5	MAY 21...	1105	6.4	100	7.1	20.0
DEC 20...	1100	6.7	102	6.8	18.0	JUN 20...	1100	6.9	92	7.4	20.0
JAN , 1984 19...	1005	6.0	107	6.7	19.0	JUL 23...	1155	6.2	90	7.3	23.0
FEB 21...	1120	9.1	97	7.6	19.5	AUG 20...	1035	4.0	105	7.8	20.5
MAR 20...	1105	6.8	100	7.5	19.5	SEP 20...	1040	5.6	95	7.4	20.5

16079000 - KAPAHI DITCH NR KEALIA, KAUAI, HI (LAT 22 06 09 LONG 159 22 28)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983 20...	0920	.52	67	6.9	22.5	APR , 1984 20...	0935	31	78	6.9	20.0
NOV 22...	0930	13	92	6.7	21.0	MAY 21...	0930	2.8	140	7.1	21.5
DEC 20...	0940	2.8	130	6.7	17.0	JUN 20...	0905	2.8	130	7.2	22.0
JAN , 1984 19...	0915	9.3	110	6.8	22.0	JUL 23...	1350	2.3	125	7.2	22.5
FEB 21...	0945	3.3	130	7.6	20.5	AUG 20...	0905	2.3	130	7.8	23.0
MAR 20...	0945	2.8	130	7.6	21.5	SEP 20...	0915	2.3	128	7.4	22.0

16087000 - ANAHOLA DITCH WASTEWAY NR KEALIA, KAUAI, HI (LAT 22 08 16 LONG 159 22 28)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983 03...	1015	.45	85	7.3	19.5	APR , 1984 04...	1000	.08	78	6.8	21.0
NOV 02...	1000	.08	78	7.1	20.5	MAY 03...	1005	.12	80	6.7	21.5
DEC 02...	1020	.06	85	6.6	20.5	JUN 04...	1030	.14	87	6.9	23.0
JAN , 1984 04...	1005	.08	95	6.7	18.5	JUL 02...	1000	.08	80	6.6	23.5
FEB 02...	1020	.35	63	7.2	20.0	AUG 02...	1015	.03	88	6.6	24.0
MAR 02...	1030	.11	85	7.1	19.5	30...	1000	.08	85	6.9	22.5

16088000 - ANAHOLA DITCH AB KANEHA RES NR KEALIA, KAUAI, HI (LAT 22 08 10 LONG 159 22 28)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983 20...	1310	22	45	7.0	21.5	APR , 1984 20...	1315	15	60	6.7	20.0
NOV 22...	1105	8.8	75	6.7	20.5	MAY 21...	1230	2.0	80	7.1	22.0
DEC 20...	1235	1.8	82	6.8	17.5	JUN 20...	1230	2.3	75	6.9	22.0
JAN , 1984 19...	1145	2.6	75	6.8	21.0	JUL 23...	0930	1.8	74	6.9	21.5
FEB 21...	1305	4.2	75	7.4	20.0	AUG 20...	1220	.86	85	7.8	23.0
MAR 20...	1245	2.3	75	7.4	21.0	SEP 20...	1255	1.1	70	7.3	23.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI--Continued

16089000 - ANAHOLA STREAM NR KEALIA, KAUAI, HI (LAT 22 09 05 LONG 159 21 17)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983					
03...	1215	26	98	7.4	21.0
NOV					
02...	1315	7.0	110	7.1	22.0
DEC					
02...	1220	5.2	120	6.9	21.0
JAN , 1984					
04...	1120	4.8	130	6.7	20.0
FEB					
02...	1330	33	83	7.4	20.5
MAR					
02...	1240	5.0	120	7.6	21.5
APR , 1984					
04...	1145	3.3	128	7.8	21.5
MAY					
03...	1230	7.5	112	7.4	23.0
JUN					
04...	1220	3.5	130	7.5	24.0
JUL					
05...	1020	4.2	130	7.4	24.0
AUG					
02...	1150	2.2	135	7.6	24.5
30...	1200	1.8	140	7.4	24.5

16097500 - HALAULANI STR AT ALT 400 FT NR KILAUEA, KAUAI, HI (LAT 22 10 54 LONG 159 25 17)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983					
19...	1135	20	90	7.1	22.0
DEC					
08...	1255	5.4	105	6.9	22.0
JAN , 1984					
31...	1020	14	95	7.6	20.0
MAR , 1984					
23...	0940	4.4	110	7.6	20.5
MAY					
22...	1315	6.1	109	7.2	22.5
JUL					
27...	1135	4.4	110	7.5	23.0

16100000 - HANALEI TUNNEL OUTLET NR LIHUE, KAUAI, HI (LAT 22 05 02 LONG 159 27 50)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983					
04...	1105	30	38	7.6	19.0
NOV					
01...	1030	30	75	7.2	18.0
DEC					
01...	1020	22	81	6.7	17.5
JAN , 1984					
03...	1035	16	80	6.9	17.5
FEB					
01...	1035	36	65	7.3	18.5
MAR					
01...	1010	20	72	7.5	16.5
APR , 1984					
02...	1030	26	75	7.4	18.5
MAY					
02...	1040	31	73	7.2	18.5
JUN					
01...	1055	15	80	7.3	19.5
JUL					
03...	1035	14	88	7.4	19.5
AUG					
01...	1035	23	72	7.5	19.5
31...	1035	21	62	7.2	19.5

16103000 - HANALEI RIVER NR HANALEI, KAUAI, HI (LAT 22 11 31 LONG 159 27 57)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983					
18...	1055	85	93	7.2	22.0
DEC					
08...	0955	57	102	6.9	19.0
JAN , 1984					
30...	1030	120	82	7.5	19.5
MAR , 1984					
22...	0920	48	120	7.8	20.0
MAY					
22...	1030	59	100	7.7	21.0
JUL					
24...	1115	52	105	7.7	24.0

16108000 - WAINIHA RIVER NEAR HANALEI, KAUAI, HI (LAT 22 08 20 LONG 159 33 38)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
NOV , 1983					
17...	1300	52	70	7.2	20.0
FEB , 1984					
08...	1245	95	43	7.6	17.0
APR , 1984					
24...	1145	74	59	7.0	20.0
JUL					
10...	1215	43	63	7.6	21.0

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TC SEPTEMBER 1984

HAWAII, ISLAND OF OAHU

16200000 - NF KAUKONAHUA STR AB RB NR WAHIAWA, OAHU, HI (LAT 21 31 09 LONG 157 56 53)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
25...	1410	8.4	46	7.2	21.5
DEC					
05...	1415	2.9	48	6.8	20.5
JAN , 1984					
12...	1410	.81	49	6.8	18.5
MAR					
07...	1325	1.8	52	7.0	21.5
APR , 1984					
26...	1300	7.4	46	6.8	22.0
JUN					
06...	1340	2.3	51	7.0	23.0
JUL					
30...	1335	2.1	52	7.0	24.0
SEP					
12...	1425	2.1	50	7.0	26.0

16208000 - S F KAUKONAHUA STR AT E PUMP RE WAHIAWA, OAHU, HI (LAT 21 29 32 LONG 157 59 54)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
21...	1645	22	39	6.3	22.0
JAN , 1984					
18...	1445	1.6	56	6.7	20.5
MAR					
19...	1735	1.4	70	6.6	23.0
MAY					
01...	1700	7.3	58	6.7	23.0
JUN , 1984					
08...	1145	3.3	64	6.7	24.0
AUG					
01...	1140	6.3	60	6.6	26.0
SEP					
17...	1600	1.2	50	6.5	24.0

16211600 - MAKAHA STREAM NR MAKAHA, OAHU, HI (LAT 21 30 16 LONG 158 10 59)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
DEC , 1983					
07...	1220	.19	110	7.2	22.0
27...	0800	.38	150	7.3	19.5
27...	1515	3.3	205	7.3	20.0
28...	1650	3.5	205	7.5	20.0
30...	1320	3.4	225	7.6	20.0
JAN , 1984					
03...	1430	3.1	215	7.4	20.5
06...	1540	4.6	180	7.7	19.5
11...	1520	3.1	220	7.6	20.0
19...	1420	3.2	220	7.7	20.5
26...	1230	2.9	220	7.6	20.0
FEB					
10...	1505	2.8	220	7.8	19.5
17...	1605	2.8	210	7.7	20.0
FEB , 1984					
24...	1505	2.6	200	7.9	20.0
MAR					
01...	1435	2.4	205	7.9	20.5
08...	1320	2.9	200	8.0	20.0
15...	1445	2.6	210	7.8	19.5
22...	1510	2.4	205	7.8	20.0
30...	1545	.26	170	7.6	21.0
MAY					
02...	1400	.36	145	7.6	21.0
JUN					
12...	1350	.11	200	7.2	21.5
SEP					
18...	1445	.03	245	7.0	21.5

16212800 - KIPAPA STREAM NR WAHIAWA, OAHU, HI (LAT 21 28 13 LONG 157 57 40)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
18...	1620	1.9	69	7.0	25.0
NOV					
29...	1155	1.4	70	7.5	21.0
JAN , 1984					
25...	1200	1.9	60	6.9	21.0
MAR					
14...	1235	.27	68	6.9	23.5
APR , 1984					
27...	1440	8.5	59	6.5	23.0
JUN					
07...	1240	.26	73	7.2	25.0
AUG					
03...	1200	.49	61	7.0	26.5
SEP					
21...	1140	.11	55	6.8	26.0

16216000 - WAIAWA STREAM NR PEARL CITY, OAHU, HI (LAT 21 23 57 LONG 157 58 51)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
11...	1155	3.6	680	7.1	23.0
NOV					
29...	1520	1.7	870	7.0	23.0
JAN , 1984					
11...	1150	2.2	800	7.1	22.0
MAR					
01...	1515	1.7	875	7.4	24.0
APR , 1984					
18...	1420	1.6	850	7.4	25.0
MAY					
31...	1545	1.5	900	7.4	25.5
JUL					
25...	1320	1.2	870	7.4	24.5
SEP					
05...	1145	1.4	880	7.0	22.0

16226000 - NORTH HALAWA STREAM NR AIEA, OAHU, HI (LAT 21 23 46 LONG 157 53 37)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
05...	1045	2.0	120	7.1	22.0
NOV					
29...	1145	.07	140	7.2	21.5
JAN , 1984					
13...	1140	.21	135	7.2	20.0
MAR					
06...	1030	.12	140	6.3	19.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

16232000 - NUUANU STR BL RES 2 WASTEWAY NR HONOLULU, OAHU, HI (LAT 21 20 57 LONG 157 49 40)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
04...	1425	2.5	135	7.2	23.0
NOV					
28...	1415	2.5	125	7.6	21.0
JAN , 1984					
11...	1545	1.9	125	7.4	21.0
MAR					
05...	1115	2.0	120	7.4	19.5
APR					
12...	1250	1.3	125	7.4	22.0
MAY , 1984					
29...	1515	.88	130	7.4	23.0
JUL					
30...	1415	.62	135	7.5	23.5
SEP					
05...	1600	.56	140	7.4	24.5
25...	1520	.36	140	7.4	23.5

16240500 - WAIAKEAKUA STREAM AT HONOLULU, OAHU, HI (LAT 21 19 53 LONG 157 48 08)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983					
04...	1015	4.5	130	7.2	21.5
NOV					
30...	1050	3.1	135	7.5	21.5
JAN , 1984					
16...	1045	2.9	140	7.3	21.0
FEB					
28...	1200	2.7	130	7.5	21.0
APR , 1984					
19...	1055	3.0	140	6.9	20.5
JUN					
05...	1100	1.9	135	7.3	21.0
JUL					
30...	0950	1.4	140	7.6	21.5
SEP					
11...	1020	1.2	160	7.5	21.5

16254000 - MAKAWAO STREAM NEAR KAILUA, OAHU, HI (LAT 21 21 49 LONG 157 46 02)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
NOV , 1983					
03...	1030	2.1	200	7.4	22.0
DEC					
15...	1010	2.0	190	6.9	22.0
FEB , 1984					
03...	1145	2.4	200	7.7	20.5
MAR					
22...	1000	2.0	190	7.5	22.0
JUL , 1984					
02...	1115	1.6	200	7.6	23.0
AUG					
14...	1455	1.1	190	7.7	23.5
SEP					
21...	1150	1.0	190	7.6	22.5

16283200 - KAHALUU STREAM NEAR AHUIMANU, OAHU, HI (LAT 21 26 32 LONG 157 50 47)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
DEC , 1983					
09...	1500	1.1	185	6.9	21.5
FEB , 1984					
03...	1425	1.7	185	6.9	22.0
MAR					
22...	1500	.80	180	7.2	23.5
MAY , 1984					
07...	1455	.86	170	7.1	24.0
JUN					
27...	1200	.71	180	7.1	22.0
AUG					
20...	1555	.57	195	7.4	22.5

16283600 - SF WAIHEE STR NR HEEIA, OAHU, HI (LAT 21 26 47 LONG 157 52 12)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
NOV , 1983					
15...	1000	.60	130	7.6	21.0
FEB , 1984					
15...	1035	2.0	110	7.5	19.5
MAR					
27...	1130	.64	105	7.3	21.0
JUN , 1984					
29...	0925	.97	110	--	19.5
AUG					
15...	1140	1.1	110	7.6	20.0

16283700 - NF WAIHEE STREAM NR HEEIA, OAHU, HI (LAT 21 26 48 LONG 157 52 18)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
NOV , 1983					
15...	1240	.88	130	7.6	22.0
FEB , 1984					
15...	1225	1.7	110	7.4	19.0
MAR , 1984					
27...	1320	.94	110	7.4	21.5

16284200 - WAIHEE STREAM NR KAHALUU, OAHU, HI (LAT 21 27 04 LONG 157 51 36)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
NOV , 1983					
02...	1405	4.8	125	7.6	21.0
DEC					
28...	1520	4.6	130	7.7	21.0
FEB , 1984					
15...	1500	7.4	140	7.1	20.0
MAR					
27...	1610	4.6	135	7.1	21.0
MAY , 1984					
09...	1350	4.6	140	--	20.0
JUN					
27...	1535	4.5	140	7.3	21.5
AUG					
15...	1430	4.8	140	7.8	21.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16294900 - WAIKANE STREAM AT ALT 75 FT AT WAIKANE, OAHU, HI (LAT 21 30 00 LONG 157 51 54)											
NOV , 1983						JUN , 1984					
08...	1450	2.9	160	7.5	23.0	28...	0910	1.6	170	7.3	22.0
FEB , 1984						AUG					
06...	1110	3.0	140	7.1	20.0	20...	1305	1.0	185	7.5	23.0
MAR						SEP					
28...	1115	2.2	135	7.0	22.0	24...	1030	1.1	200	6.9	23.0
16296500 - KAHANA STR AT ALT 30 FT NR KAHANA, OAHU, HI (LAT 21 32 37 LONG 157 53 07)											
DEC , 1983						JUL , 1984					
08...	1400	18	135	6.9	21.5	03...	1335	13	130	6.8	22.5
FEB , 1984						AUG					
16...	1240	24	115	6.2	20.0	16...	1150	12	135	7.1	22.0
MAR											
19...	1410	14	130	6.8	22.5						
16303000 - PUNALUU STREAM NR PUNALUU, OAHU, HI (LAT 21 33 33 LONG 157 54 06)											
DEC , 1983						JUN , 1984					
16...	1125	11	130	7.5	21.5	28...	1300	9.1	120	7.7	21.5
APR , 1984						JUL					
05...	1355	7.0	135	7.0	22.5	24...	1310	8.6	130	7.8	21.5
MAY						SEP					
02...	1350	13	110	7.8	22.0	11...	1410	7.3	130	7.4	22.5
16304200 - KALUANUI STREAM NR PUNALUU, OAHU, HI (LAT 21 35 22 LONG 157 54 38)											
NOV , 1983						MAY , 1984					
16...	1010	2.6	60	6.8	21.0	08...	0920	.67	57	6.6	22.0
DEC						JUN					
20...	1125	.16	60	6.9	24.5	25...	1245	.18	68	7.0	25.0
FEB , 1984						AUG					
06...	1415	.54	63	6.6	19.0	16...	1340	.09	72	7.1	26.5
MAR											
19...	1125	.50	62	6.7	22.5						
16325000 - KAMANANUI STR AT PUPUKEA MIL RD NR MAUNAWAI, OAHU, HI (LAT 21 37 25 LONG 158 01 04)											
OCT , 1983						MAY , 1984					
24...	1230	3.5	65	6.9	23.5	09...	1315	1.0	82	7.6	25.5
NOV						JUN					
30...	1440	2.8	80	7.0	22.0	04...	1620	.48	78	7.2	27.0
JAN , 1984						JUL					
17...	1205	1.9	70	7.2	20.0	03...	1205	.25	80	6.6	27.0
MAR						AUG					
09...	1100	1.3	70	6.8	22.0	07...	1310	.62	72	6.9	28.0
APR											
25...	1145	3.3	75	7.0	22.5						
16330000 - KAMANANUI STREAM AT MAUNAWAI, OAHU, HI (LAT 21 38 20 LONG 158 03 27)											
OCT , 1983						APR , 1984					
19...	1545	5.2	67	6.9	25.0	24...	1735	5.0	80	6.9	24.5
DEC						MAY					
06...	1120	2.1	86	7.2	22.5	17...	1630	.53	100	7.2	25.5
JAN , 1984						JUN					
13...	1445	1.8	80	7.2	21.5	05...	1615	.18	105	6.9	28.0
MAR						JUL					
09...	1415	1.2	80	7.7	23.5	31...	1100	.01	230	6.8	27.0
16345000 - OPAEULA STREAM NR WAHIAWA, OAHU, HI (LAT 21 33 55 LONG 158 00 10)											
OCT , 1983						JUN , 1984					
20...	1400	39	38	6.2	23.0	05...	1140	.74	57	6.7	25.0
DEC						AUG					
06...	1535	1.7	47	6.8	21.5	01...	1505	.21	42	6.5	28.0
						06...	1400	2.3	54	6.6	27.0
JAN , 1984						SEP					
16...	1520	3.4	51	6.6	20.5	14...	1140	.37	60	6.4	25.0
MAR											
13...	1125	.84	52	6.5	23.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MOLOKAI

16404200 - PILIPILILAU STREAM NR PELEKUNU, MOLOKAI, HI (LAT 21 08 08 LONG 156 53 09)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
DEC , 1983						MAY , 1984					
01...	1135	.76	150	7.5	20.5	17...	1000	.89	150	7.6	20.0
MAR , 1984						AUG					
13...	1050	1.0	150	6.6	19.5	08...	1015	.72	148	6.2	21.0

16405100 - MOLOKAI TUNNEL AT EAST PORTAL, MOLOKAI, HI (LAT 21 08 38 LONG 156 55 16)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983						APR , 1984					
25...	0950	6.2	--	--	18.0	17...	1300	2.4	--	--	17.5
DEC						JUN					
13...	1055	3.8	--	--	18.5	05...	1525	4.3	--	--	19.5
JAN , 1984						JUL					
24...	1050	5.5	--	--	18.0	24...	1000	3.2	--	--	19.0
MAR						SEP					
06...	0925	4.4	--	--	18.0	05...	0910	5.4	--	--	19.0

16405300 - MOLOKAI TUNNEL AT WEST PORTAL, MOLOKAI, HI (LAT 21 07 27 LONG 156 59 50)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983						APR , 1984					
25...	1445	8.8	87	5.8	18.5	17...	1600	4.7	76	7.2	18.0
DEC						JUN					
13...	1550	9.4	106	5.9	19.0	05...	1810	6.5	108	6.4	19.0
JAN , 1984						JUL					
24...	1610	7.1	78	6.3	18.5	24...	1515	6.4	110	6.3	19.5
MAR						SEP					
06...	1455	7.0	99	6.1	18.0	05...	1525	6.6	110	7.8	19.5

16405500 - WAIKOLU STR AT ALT 900 FT NR KALAUPAPA, MOLOKAI, HI (LAT 21 08 43 LONG 156 55 18)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983						APR , 1984					
25...	1155	.44	105	5.8	20.0	17...	1215	7.0	62	7.0	18.5
DEC						JUN					
13...	1335	.15	105	5.9	18.5	05...	1320	.18	100	6.7	20.5
JAN , 1984						JUL					
24...	1220	.98	74	6.2	19.0	24...	1300	.32	108	6.1	22.0
MAR						SEP					
06...	1050	.72	98	6.1	20.0	05...	1050	.07	108	7.3	21.0

16408000 - WAIKOLU STR BL PIPE CROSS NR KALAUPAPA, MOLOKAI, HI (LAT 21 09 45 LONG 156 55 54)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983						APR , 1984					
25...	1025	5.6	120	6.2	20.5	17...	1050	14	95	7.3	19.5
DEC						JUN					
13...	1225	6.1	118	5.9	20.5	05...	1205	3.6	118	6.1	21.0
JAN , 1984						JUL					
24...	1300	5.7	77	6.2	21.0	24...	1230	3.3	120	6.2	22.5
MAR						SEP					
06...	0920	6.5	120	6.1	19.0	05...	1040	3.9	118	7.7	22.0

16419500 - PAPIO GULCH AT HALAWA, MOLOKAI, HI (LAT 21 08 55 LONG 156 44 16)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT , 1983						MAR , 1984					
24...	1110	.12	124	5.9	22.0	05...	1555	.04	124	6.3	20.5
DEC											
12...	1220	.31	106	5.9	21.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16508000 - HANAWI STREAM NEAR NAHIKU, MAUI, HI (LAT 20 48 37 LONG 156 07 00)											
OCT , 1983 06...	0940	51	20	6.8	22.0	MAR , 1984 29...	1300	22	25	6.2	19.0
NOV 21...	1605	5.6	40	6.0	20.0	MAY 09...	1505	5.4	45	7.4	20.0
JAN , 1984 06...	0950	7.9	18	5.8	17.0	JUN 27...	1450	3.7	44	6.0	20.5
FEB 16...	1120	12	25	6.4	18.0	AUG 22...	1015	2.2	47	6.3	20.0
16512000 - KOOLAU DITCH AT NAHIKU WEIR NR NAHIKU, MAUI, HI (LAT 20 48 56 LONG 156 07 15)											
OCT , 1983 04...	1520	92	24	5.9	19.0	MAR , 1984 29...	1330	54	30	6.1	18.5
NOV 21...	1505	28	44	5.9	19.5	MAY 09...	1245	23	46	7.7	21.0
JAN , 1984 04...	1600	11	48	6.0	19.0	JUN 27...	1430	17	48	6.1	22.0
FEB 15...	1350	93	30	5.7	18.0	AUG 21...	1725	11	49	6.4	20.5
16518000 - WEST WAILUAIKI STREAM NEAR KEANAE, MAUI, HI (LAT 20 49 16 LONG 156 08 37)											
OCT , 1983 04...	1155	190	20	6.4	19.0	MAR , 1984 29...	1005	63	23	6.4	18.0
NOV 21...	1230	6.3	39	5.9	20.0	MAY 09...	1020	4.9	45	7.1	21.0
JAN , 1984 04...	1455	2.6	36	6.1	18.5	JUN 27...	0855	5.7	47	5.9	21.0
FEB 15...	1540	133	32	5.8	18.0	AUG 21...	1405	2.1	51	6.3	20.5
16523000 - KOOLAU DITCH NR KEANAE, MAUI, HI (LAT 20 49 53 LONG 156 10 30)											
OCT , 1983 04...	1155	214	21	6.0	19.0	MAR , 1984 29...	1000	212	26	6.1	17.5
NOV 21...	1155	74	46	6.5	20.0	MAY 09...	0920	58	49	7.1	19.5
JAN , 1984 04...	1045	41	46	6.2	18.0	JUN 27...	1145	59	49	6.3	20.5
FEB 16...	1340	170	32	5.9	18.0	AUG 21...	1045	28	53	6.3	20.0
16531000 - KULA DIV FROM HAIPUAENA STR NR OLINDA, MAUI, HI (LAT 20 48 24 LONG 156 13 27)											
OCT , 1983 11...	1130	.97	14	5.2	13.0	APR , 1984 03...	1115	.72	15	4.9	13.0
NOV 28...	1035	.14	14	4.7	12.5	MAY 08...	1040	.12	14	5.7	15.0
JAN , 1984 16...	1205	.46	13	5.2	12.0	JUN 29...	1050	.02	17	6.6	19.0
FEB 24...	1300	.28	13	6.8	12.0	AUG 24...	1050	.48	20	5.3	15.5
16538000 - SPRECKELS DITCH AT HAIPUAENA WEIR NR HUELO, MAUI, HI (LAT 20 51 15 LONG 156 11 25)											
OCT , 1983 11...	1050	40	29	6.9	18.0	MAR , 1984 30...	1030	60	29	6.6	17.5
NOV 23...	1005	53	30	6.0	19.5	MAY 07...	1040	10	39	6.2	20.5
JAN , 1984 06...	1455	21	25	6.8	18.0	JUN 25...	1130	8.8	41	7.1	21.0
FEB 21...	1310	29	28	6.3	18.0	AUG 20...	1100	4.1	45	6.4	21.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16541000 - KOOLAU DITCH AT HAIPUAENA NR HUELO, MAUI, HI (LAT 20 51 17 LONG 156 11 19)											
OCT , 1983						MAR , 1984					
11...	1405	174	37	6.4	18.0	30...	1325	185	29	6.0	18.0
NOV						MAY					
23...	1240	130	45	6.1	19.5	07...	1400	68	48	6.0	20.5
JAN , 1984						JUN					
06...	1210	116	24	6.7	17.5	25...	1310	53	51	7.3	20.0
FEB						AUG					
21...	1510	134	35	5.2	18.0	20...	1415	28	53	6.3	21.0
16541500 - MANUEL LUIS DITCH AT PUOHOKAMOA GL NR HUELO, MAUI, HI (LAT 20 51 48 LONG 156 10 59)											
OCT , 1983						APR , 1984					
06...	1345	116	20	6.4	20.0	02...	1005	.37	60	6.3	20.5
NOV						MAY					
23...	1100	1.3	59	6.3	21.0	07...	1120	.47	62	6.2	23.0
JAN , 1984						JUN					
06...	1245	1.1	41	5.7	19.0	25...	1055	.30	65	6.7	22.0
FEB						AUG					
21...	1045	1.8	32	5.1	19.0	22...	1230	.09	69	6.0	23.0
16587000 - HONOPOU STREAM NR HUELO, MAUI, HI (LAT 20 53 20 LONG 156 15 20)											
OCT , 1983						APR , 1984					
07...	1510	8.6	46	5.9	21.0	03...	1115	.84	53	5.9	21.5
NOV						MAY					
25...	1400	2.5	53	6.0	19.5	08...	1130	1.6	54	6.0	22.5
DEC						JUN					
27...	1115	1.6	45	7.0	19.5	26...	1315	.84	55	5.9	24.0
FEB , 1984						AUG					
22...	1145	3.3	51	6.9	19.0	15...	1145	.38	55	6.9	23.0
16588000 - WAILOA DITCH AT HONOPOU NR HUELO, MAUI, HI (LAT 20 53 20 LONG 156 15 19)											
OCT , 1983						APR , 1984					
07...	1435	264	26	6.3	20.0	03...	1320	118	36	6.0	20.0
NOV						MAY					
25...	1245	132	41	6.2	18.5	08...	0945	112	48	6.2	20.5
JAN , 1984						JUN					
09...	1200	75	40	6.9	18.0	26...	1220	85	49	5.8	21.0
FEB						AUG					
22...	1010	206	36	6.8	18.0	15...	1035	52	50	6.8	21.0
16589000 - NEW HAMAKUA DITCH AT HONOPOU NR HUELO, MAUI, HI (LAT 20 53 28 LONG 156 15 22)											
OCT , 1983						APR , 1984					
07...	1045	168	27	6.4	19.5	03...	1050	.93	46	6.3	22.0
NOV						MAY					
25...	1020	2.9	56	6.4	19.5	08...	1335	1.1	63	5.9	24.0
JAN , 1984						JUN					
09...	1445	.86	58	6.9	20.0	26...	0930	.44	65	6.2	22.0
FEB						AUG					
22...	1420	4.1	59	6.6	20.0	15...	1335	.06	60	8.2	31.0
16592000 - LOWRIE DITCH AT HONOPOU GULCH NR HUELO, MAUI, HI (LAT 20 54 57 LONG 156 15 08)											
OCT , 1983						APR , 1984					
13...	1255	32	50	5.8	22.0	02...	1400	23	53	6.0	23.5
NOV						MAY					
28...	1245	30	57	5.3	21.5	07...	1630	13	71	5.8	24.5
JAN , 1984						JUN					
09...	1240	10	62	6.0	21.0	28...	1240	5.6	79	7.7	25.5
FEB						AUG					
17...	1345	42	60	6.5	20.0	23...	1310	26	33	6.2	22.5

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

16594000 - HAIKU DITCH AT HONOPOU GULCH NR KAILUA, MAUI, HI (LAT 20 55 07 LONG 156 14 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 13...	1020	3.4	79	5.9	22.0	APR , 1984 02...	1235	1.5	94	5.7	23.0
NOV 28...	1015	2.4	94	5.2	21.5	MAY 07...	1640	1.5	102	5.9	24.0
JAN , 1984 09...	1025	1.8	93	6.0	20.5	JUN 28...	1030	1.4	100	6.9	23.0
FEB 17...	0920	7.0	77	5.9	20.0	AUG 23...	1030	6.2	40	6.4	21.5

16599500 - OPANA TUNNEL NR KAILIILI, MAUI, HI (LAT 20 51 04 LONG 156 16 17)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 11...	1530	4.2	33	6.6	18.0	APR , 1984 03...	1430	2.2	37	6.4	18.0
NOV 28...	1440	1.6	42	4.9	17.0	MAY 25...	1300	2.4	40	6.3	20.0
JAN , 1984 16...	1520	3.3	31	6.5	17.0	JUN 29...	1350	.37	72	5.8	20.0
FEB 24...	0945	3.5	4[illegible]	6.1	15.5	AUG 24...	1500	.65	50	6.5	21.0

16604500 - IAO STREAM AT KEPANIWAI PARK NR WAILUKU, MAUI, HI (LAT 20 53 08 LONG 156 32 32)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
NOV , 1983 30...	1440	34	96	6.9	20.0	APR , 1984 10...	1055	67	59	6.0	18.5
DEC 26...	1400	245	84	7.3	20.0	MAY 22...	1040	32	81	7.3	21.0
JAN , 1984 17...	1140	61	99	6.2	19.0	JUN 19...	1335	23	87	6.2	22.0
FEB 27...	1220	33	95	5.9	20.5	AUG 14...	1225	18	88	7.0	23.5
MAR 23...	1330	18	105	6.5	20.5						

16614000 - WAIHEE RIVER AT DAM NR WAIHEE, MAUI, HI (LAT 20 56 20 LONG 156 32 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
NOV , 1983 15...	1425	61	62	5.5	19.5	MAR , 1984 23...	0940	43	70	6.7	19.0
DEC 08...	1415	49	65	7.5	19.5	APR 30...	1000	40	68	6.2	19.0
28...	1340	40	66	7.5	19.5	JUN 19...	1000	40	66	6.1	20.0
JAN , 1984 13...	1200	705	29	6.1	18.0						
31...	0930	106	54	6.3	18.5	AUG 14...	1200	36	65	7.1	21.0
FEB 28...	1045	44	70	5.8	19.0						

16620000 - HONOKOHAU STREAM NR HONOKOHAU, MAUI, HI (LAT 20 57 48 LONG 156 35 22)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 12...	1510	530	26	6.9	19.0	APR , 1984 04...	1245	20	62	7.7	19.5
NOV 29...	1300	19	68	7.7	19.5	MAY 11...	1045	15	69	6.4	21.0
JAN , 1984 10...	1240	16	61	6.4	19.0	JUL 03...	1300	14	68	7.9	21.5
FEB 23...	1150	20	56	7.3	18.0	AUG 22...	1145	12	70	7.7	21.0

16638500 - KAHOMA STREAM AT LAHAINA, MAUI, HI (LAT 20 53 10 LONG 156 40 36)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
MAR , 1984 02...	1105	58	30	6.8	18.5	APR , 1984 11...	1000	7.3	66	6.3	20.0

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII

16700000 - WAIAKEA STREAM NR MOUNTAIN VIEW, HAWAII, HI (LAT 19 38 30 LONG 155 10 28)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 26...	1100	19	36	7.0	17.0	MAR , 1984 28...	0925	1.1	55	7.0	17.0
NOV 28...	0955	3.4	39	6.8	17.0	APR 25...	0955	24	38	7.2	17.0
DEC 28...	0900	.27	46	7.0	17.0	JUN 26...	1455	4.0	40	6.8	17.0
JAN , 1984 25...	1230	3.4	40	6.8	17.0	JUL 27...	0940	1.1	58	6.7	17.0
FEB 27...	0835	9.4	38	7.0	17.0	AUG 29...	0900	5.7	42	6.9	17.0

16700900 - OLAA FLUME SPRING NR KAUMANA, HAWAII, HI (LAT 19 41 59 LONG 155 11 13)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 06...	1130	4.9	32	6.6	18.0	MAY , 1984 08...	1100	8.6	34	6.7	19.0
NOV 04...	0950	2.6	32	6.5	17.0	JUN 28...	1035	2.4	36	6.5	18.0
DEC 05...	1205	5.6	36	6.7	18.0	JUL 25...	1055	1.4	34	6.7	18.0
FEB , 1984 01...	1000	12	30	6.6	17.0	SEP 05...	1445	2.2	35	6.6	18.0

16700950 - LYMAN SPRINGS NO. 2 NEAR PIIHONUA, HAWAII, HI (LAT 19 42 02 LONG 155 10 36)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 12...	1115	5.6	33	6.5	17.0	MAY , 1984 07...	1100	4.9	32	6.8	18.5
DEC 22...	0925	1.4	30	7.4	17.0	JUN 26...	0950	4.2	34	7.0	17.5
FEB , 1984 24...	1025	5.1	32	7.6	18.0	SEP 07...	1140	3.5	36	6.8	17.0

16704000 - WAILUKU RIVER AT PIIHONUA, HAWAII, HI (LAT 19 42 56 LONG 155 09 12)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 13...	1400	210	31	7.1	20.0	APR , 1984 06...	1440	39	42	7.1	20.0
NOV 16...	1040	39	40	6.8	18.0	MAY 17...	1015	30	45	6.8	19.0
JAN , 1984 05...	1020	2.2	52	7.0	19.0	JUL 20...	1420	8.2	50	7.0	20.0
FEB 13...	1430	48	36	7.0	19.0	SEP 12...	1305	12	38	6.8	21.0
MAR 08...	1415	22	42	7.3	21.0						

16720000 - KAWAINUI STREAM NR KAMUELA, HAWAII, HI (LAT 20 05 18 LONG 155 40 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 05...	1410	3.0	20	6.1	16.0	APR , 1984 27...	1125	1.9	28	6.6	15.0
NOV 22...	1305	1.0	24	6.8	15.0	MAY 23...	1205	3.3	20	5.7	16.0
FEB , 1984 15...	1155	9.3	25	6.5	15.0	AUG 07...	1130	4.5	24	6.4	15.0

16720300 - KAWAIKI STREAM NEAR KAMUELA, HAWAII, HI (LAT 20 05 13 LONG 155 40 59)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983 05...	1305	.90	21	5.7	16.0	APR , 1984 27...	1045	.40	26	6.5	15.0
NOV 22...	1125	.19	30	6.4	15.0	MAY 23...	1050	.90	23	5.8	15.0
FEB , 1984 15...	1055	2.2	28	6.4	15.0	AUG 07...	1115	1.2	25	6.3	15.0

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16720500 - UPPER HAMAKUA DITCH BL KAWAIKI STR NR KAMUELA, HAWAII, HI (LAT 20 05 15 LONG 155 40 42)											
OCT , 1983						APR , 1984					
05...	1215	4.4	22	6.0	16.0	27...	1005	1.9	26	6.5	15.0
NOV						MAY					
22...	1055	7.8	26	6.4	13.0	23...	1025	3.6	25	6.5	15.0
FEB , 1984						AUG					
15...	1025	5.4	29	6.7	13.0	07...	1030	5.3	24	6.3	15.0
16724800 - UP HAMAKUA DITCH AB ALAKAHI STR NR KAMUELA, HAWAII, HI (LAT 20 04 31 LONG 155 40 26)											
OCT , 1983						MAY , 1984					
05...	1105	3.2	20	5.9	17.0	23...	0920	1.7	22	6.4	15.0
NOV						JUN					
22...	0940	1.4	29	6.7	15.0	04...	1155	1.6	22	6.6	18.0
FEB , 1984						AUG					
15...	0915	2.3	25	6.5	14.0	07...	0920	3.1	23	6.2	15.0
APR											
27...	0910	1.0	29	6.6	15.0						
16725000 - ALAKAHI STREAM NEAR KAMUELA, HAWAII, HI (LAT 20 04 27 LONG 155 40 25)											
OCT , 1983						MAY , 1984					
05...	1030	2.8	22	6.0	16.5	23...	0855	3.0	23	6.4	14.0
NOV						JUN					
22...	0915	1.2	30	6.5	14.0	22...	1230	2.1	28	6.5	15.0
FEB , 1984						AUG					
15...	0845	4.1	25	6.4	13.0	07...	0915	3.0	24	6.3	15.0
APR											
27...	0840	2.1	23	6.2	14.0						
16726000 - UP HAMAKUA DITCH AB WAIMEA RES DIV NR KAMUELA, HAWAII, HI (LAT 20 03 31 LONG 155 37 40)											
OCT , 1983						MAY , 1984					
06...	0900	9.0	24	6.2	16.0	09...	1445	1.1	26	6.4	15.0
NOV						JUN					
18...	1355	2.6	25	6.5	15.0	20...	1125	2.8	24	6.5	15.0
JAN , 1984						JUL					
06...	1155	20	22	6.4	15.0	13...	1520	29	22	6.0	15.0
FEB						AUG					
29...	1045	1.5	28	6.7	15.0	08...	1505	3.3	25	6.3	14.0
MAR											
29...	1155	41	20	6.7	14.0						
16727000 - UPPER HAMAKUA D AB PUUKAPU RES NR KAMUELA, HAWAII, HI (LAT 20 02 53 LONG 155 37 17)											
OCT , 1983						JAN , 1984					
06...	0800	.01	30	6.4	17.0	03...	1430	.05	25	6.5	17.0
NOV						MAR					
18...	1420	.02	28	6.0	17.0	29...	1230	.20	28	6.6	16.0
16756000 - KOHAKOHAU STREAM NEAR KAMUELA, HAWAII, HI (LAT 20 02 38 LONG 155 41 10)											
OCT , 1983						APR , 1984					
06...	1105	2.3	26	6.5	16.0	27...	1310	1.4	25	6.6	15.0
NOV						MAY					
18...	1150	1.4	26	6.4	15.0	11...	0800	.60	29	6.5	14.0
MAR , 1984						AUG					
29...	1055	25	20	6.3	15.0	08...	1120	.60	28	6.4	15.0
16758000 - WAIKOLOA STR AT MARINE DAM NR KAMUELA, HAWAII, HI (LAT 20 02 48 LONG 155 39 58)											
OCT , 1983						MAR , 1984					
05...	1605	4.6	36	6.2	16.0	29...	1005	18	22	6.5	15.0
NOV						MAY					
18...	1230	4.1	25	6.5	15.0	11...	0840	3.0	25	6.5	15.0
JAN , 1984						JUN					
03...	1315	2.5	25	6.5	16.0	20...	1035	3.5	25	6.4	16.0
FEB						AUG					
29...	0940	3.0	26	6.6	15.0	08...	1220	3.6	23	6.5	16.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII--Continued

16759000 - HAUANI GULCH NEAR KAMUELA, HAWAII, HI (LAT 20 02 28 LONG 155 39 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983					
06...	0950	.62	28	6.4	16.0
NOV					
18...	0920	.50	24	6.4	15.0
JAN , 1984					
18...	0855	.20	29	6.5	15.0
MAR					
29...	0915	1.8	30	6.6	15.0
MAY , 1984					
09...	1340	.18	30	6.5	15.0
JUN					
20...	0855	.25	26	6.3	15.0
AUG					
08...	0830	.31	25	6.4	15.0

16764000 - HILEA GULCH TRIBUTARY NEAR HONUAPO, HAWAII, HI (LAT 19 10 27 LONG 155 35 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
OCT , 1983					
14...	1050	.45	52	7.1	17.0
MAY , 1984					
30...	1035	.30	49	6.8	17.0
AUG , 1984					
02...	1050	1.4	44	6.9	17.0

220019159444801. Local number 2-0044-14.

LOCATION.--Lat 22°00'19", long 159°44'48", Hydrologic Unit 20070000, 1.8 mi northeast of Kokole Point, and 2.8 mi northwest of Kekaha School. Owner: Kekaha Sugar Co.

AQUIFER.--Waimea Canyon Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 245 ft, casing diameter 12 in, cased to 164 ft.

DATUM.--Altitude of land-surface datum is 8 ft. Measuring point: Top of standpipe, 11.49 ft above mean sea level. Prior to June 1979 nonrecording gage at datum 0.25 ft lower.

PERIOD OF RECORD.--Occasional measurements, 1937 to 1962 (measured by Kekaha Sugar Co.).
Water-level recorder, June 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.07 ft above mean sea level, Dec. 20, 1937; lowest measured, 7.52 ft above mean sea level, Aug. 15, 1947.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	e9.0	9.71	10.10	10.08	9.88	9.71	9.25	9.01	9.00	8.97	9.04	9.08
10	e9.0	9.82	9.98	10.11	9.83	9.57	9.20	9.10	9.04	8.98	9.07	9.48
15	8.94	9.87	9.95	9.70	9.82	9.37	9.15	9.04	8.99	9.05	9.09	9.24
20	8.95	9.97	9.96	9.89	9.94	9.27	9.04	9.01	9.02	9.01	9.05	9.22
25	9.00	9.92	10.01	9.96	9.49	9.25	9.05	8.98	9.08	8.99	e9.1	9.47
EOM	9.52	10.07	10.07	10.01	9.45	9.23	9.00	9.00	8.97	9.04	9.11	9.17

WTR YEAR 1983 MAX 10.70 NOV 23, 1982 MIN 8.75 JUL 9, 1983

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.15	8.97	8.87	9.17	9.51	9.45	9.36	9.42	8.79	8.91	9.02	9.00
10	9.38	8.91	8.85	9.04	9.22	9.12	9.39	9.33	8.81	9.07	9.00	8.94
15	9.12	8.90	8.87	9.09	9.14	9.02	9.49	8.99	8.81	8.96	8.97	8.96
20	9.09	8.92	8.90	9.46	9.11	8.98	9.56	e9.0	8.83	8.97	8.99	8.96
25	9.06	8.95	9.02	9.59	9.17	8.90	9.17	e8.9	8.85	8.97	9.03	8.96
EOM	8.96	8.89	9.43	9.43	9.25	9.20	9.23	8.83	8.88	8.98	9.04	8.98

WTR YEAR 1984 MAX 9.86 JAN 30, 1984 MIN 8.62 JUN 11, 1984

e Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV				
09...	1105	540	24.0	84
JAN				
10...	1115	530	24.0	85
FEB				
29...	1130	530	24.0	84
MAR				
29...	1110	550	24.0	82
MAY				
31...	1140	540	24.0	88
JUL				
30...	1120	550	24.0	86

HAWAII, ISLAND OF KAUAI--Continued

220354159205601. Local number, 2-0320-01.

LOCATION.--Lat 22°03'54", long 159°20'56", Hydrologic Unit 20070000, 0.6 mi east of Sleeping Giant Mountain, and 1.3 mi northwest of Wailua River bridge. Owner: Kauai County, Department of Water.

AQUIFER.--Koloa Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 240 ft, casing diameter 8 in, cased to 193 ft.

DATUM.--Altitude of land-surface datum is 155 ft. Measuring point: Top edge of steel pump-base at breather hole, 155.98 ft above mean sea level.

REMARKS.--Water-quality records for 1960, 1966, 1972-80 are available in files of district office. Water from this well is used for public supply. Water level affected by pumping of nearby well.

PERIOD OF RECORD.--February 1960, June 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.04 ft above mean sea level, Feb. 17, 1960; lowest measured, 3.31 ft below mean sea level, May 27, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	13.56	JAN 31	13.01	MAR 26	11.18	MAY 29	3.42	JUL 26	3.35	SEP 19	5.76
DEC 12	13.47										

HAWAII, ISLAND OF OAHU

211907157594701. Local number, 3-1959-05.

LOCATION.--Lat 21°19'06", long 157°59'46", Hydrologic Unit 20060000, 600 ft northwest of Ewa Beach Park, and 1.2 mi southeast of Campbell High School. Owner: Hawaii Institute of Geophysics.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1110 ft, 5-inch PVC casing, bottom 12 ft perforated.

DATUM.--Altitude of land surface datum is 6 ft. Measuring point: Top of 5-inch PVC casing, 6.40 ft above mean sea level.

REMARKS.--Geophysical log and water-quality records are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, December 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.38 ft above mean sea level, Jan. 17, 1969; lowest, 2.81 ft below mean sea level, Aug. 25, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	2.93	4.13	4.37	4.89	4.43	4.03	3.70	3.20	2.78	2.33	1.75	1.40
10	2.90	4.02	4.53	4.63	4.35	3.90	3.65	3.23	2.61	2.31	1.67	1.42
15	2.83	3.88	4.50	4.35	4.35	3.85	3.57	3.16	2.53	2.11	1.58	1.34
20	2.93	3.85	4.30	4.39	4.40	3.83	3.52	2.98	2.48	1.99	1.46	1.27
25	2.98	4.35	4.62	4.38	4.20	3.67	3.47	2.85	2.52	1.88	1.35	1.17
EOM	3.83	4.52	4.85	4.52	4.16	3.59	3.33	2.84	2.34	1.88	1.31	1.15

WTR YEAR 1983 MAX 5.12 JAN 2, 1983 MIN 0.93 SEPT 28, 1983

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	1.08	1.00	1.06	1.64	1.68	1.51	.78	.66	.29	.03	-.14	.02
10	1.00	.92	.89	1.52	1.38	1.28	.79	.55	e.20	-.03	-.19	.04
15	1.04	.93	.96	1.61	1.31	1.17	.81	.58	e.20	-.06	-.22	-.06
20	1.18	1.08	1.27	1.47	[illegible]	1.11	.61	.54	e.15	e-.10	-.12	-.15
25	1.12	1.20	1.44	1.44	1.26	.96	.71	.41	e.10	e-.10	-.23	-.12
EOM	1.10	1.07	1.60	1.37	1.20	.84	1.02	.35	e.05	e-.15	-.13	-.09

WTR YEAR 1984 MAX 1.90 JAN 4, 1984 MIN -0.40 AUG 24, 1984

e Estimated.

212154158015201. Local number, 3-2101-03.

LOCATION.--Lat 21°21'54", long 158°01'52", Hydrologic Unit 20060000, 0.4 mi southeast of Honouliuli, and 0.5 mi north of Ewa Hospital. Owner: State of Hawaii.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 355 ft, revised, casing diameter 10 in, cased to 165 ft.

DATUM.--Altitude of land-surface datum is 15 ft, revised. Measuring point: Top of horizontal flange below petcock, 13.31 ft above mean sea level.

REMARKS.--Water-quality records for 1910-16, 1920-21, 1923-75, 1978-81, are available in files of district office.

PERIOD OF RECORD.--April 1910 to June 1921, September 1923 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.16 ft above mean sea level, April 1918; lowest measured, 11.16 ft above mean sea level, Sept. 2, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	15.32	JAN 18	16.75	APR 23	14.79	JUN 6	14.03	AUG 2	13.18	SEP 13	13.04
DEC 2	15.33	MAR 9	15.86								

212123157535501. Local number, 3-2153-05.

LOCATION.--Lat 21°21'23", long 157°53'55", Hydrologic Unit 20060000, 0.4 mi northwest of Moanalua Elementary School, and 0.5 mi southwest of Tripler Hospital in Moanalua. Owner: Honolulu Board of Water Supply.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1246 ft, 6-inch PVC casing, cased to 24 ft, perforated from 24 to 1246 ft. Well was modified and deepened August 1980.

DATUM.--Altitude of land-surface datum is 35 ft. Measuring point: Top of 6-inch PVC casing, 38.20 ft above mean sea level.

REMARKS.--Geophysical log and water-quality records are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, March 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.53 ft above mean sea level Jan. 9, 1983; lowest 17.12 ft above mean sea level, Oct. 24, 1981.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	e20.9	21.34	22.00	22.40	22.26	21.91	21.60	21.36	20.69	20.29	e19.6	e19.0
10	e20.9	21.44	22.03	22.46	22.20	21.84	21.57	21.33	20.65	20.11	e19.5	e18.9
15	20.89	21.56	22.06	22.33	22.15	21.75	21.58	21.06	20.55	e20.2	e19.4	e18.9
20	20.82	21.65	22.07	22.27	22.16	21.90	21.69	20.96	20.28	e19.9	e19.3	e18.9
25	20.83	21.84	22.23	22.32	22.00	e21.8	21.51	20.85	20.23	e19.8	e19.2	e18.8
EOM	21.11	22.05	22.32	22.27	21.97	e21.6	21.36	20.78	20.18	e19.7	e19.1	18.69

WTR YEAR 1983 MAX 22.53 JAN 9, 1983 MIN 18.63 SEP 30, 1983

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	18.65	18.54	18.56	18.64	18.63	18.71	18.19	18.00	17.65	17.38	17.37	17.45
10	18.61	18.58	18.35	18.57	18.01	18.43	18.18	17.88	17.92	17.35	17.33	17.41
15	18.53	18.57	18.50	18.59	18.59	18.38	18.01	17.77	17.51	17.34	17.30	17.34
20	18.64	18.46	18.51	18.57	18.71	18.46	18.00	17.92	17.55	17.42	17.35	17.34
25	18.77	18.49	18.41	18.58	18.51	18.23	18.00	17.76	17.47	17.44	17.29	17.34
EOM	18.57	18.48	18.50	18.74	18.45	18.16	18.17	17.71	17.41	17.37	17.29	17.33

WTR YEAR 1984 MAX 18.82 OCT 25, 1983 MIN 17.21 AUG 24, 1984

e Estimated.

HAWAII, ISLAND OF OAHU--Continued

212238157561101. Local number, 3-2256-10.

LOCATION.--Lat 21°22'38", long 157°56'11", Hydrologic Unit 20060000, 0.4 mi southwest of Aiea School, and 0.5 mi east of McGrew Point. Owner: U.S. Navy.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 173 ft, casing diameter 12 in, cased to 143 ft.

DATUM.--Altitude of land-surface datum is 10 ft. Measuring point: Top of 10-inch stilling pipe for water-level recorder, 26.15 ft above mean sea level.

REMARKS.--Water-quality records for 1923, 1928-30, 1934-68, 1972, 1974-75 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, January 1928 to February 1931, September 1934 to August 1966. Water-level recorder, September 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.90 ft above mean sea level, Jan. 16, 1928; lowest, 12.97 ft above mean sea level, Oct. 5, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.73	15.55	15.50	15.89	e15.8	e15.7	15.26	15.03	14.63	14.38	14.19	14.08
10	15.75	15.46	15.42	15.86	e15.8	15.70	15.19	14.86	14.63	14.26	14.06	14.11
15	15.68	15.52	15.42	e15.8	e15.7	15.57	15.18	14.82	14.49	14.39	14.02	14.09
20	15.70	15.56	15.52	e15.7	e15.7	15.55	15.07	14.86	14.41	14.33	14.10	14.04
25	15.68	15.60	15.78	e15.7	e15.7	15.43	15.08	14.77	14.32	14.28	14.02	14.07
EOM	15.65	15.54	15.88	e15.7	e15.7	15.36	15.19	14.70	14.27	14.23	13.98	14.10

WTR YEAR 1984 MAX 15.99 JAN 8, 1984 MIN 13.94 AUG 24, 1984

e Estimated.

HAWAII, ISLAND OF OAHU--Continued

212340158001901. Local number, 3-2300-18.

LOCATION.--Lat 21°23'40", long 158°00'19", Hydrologic Unit 20060000, 700 ft south of August Ahrens School, and 1400 ft northeast of L'Orange Park, Waipahu. Owner: Honolulu Board of Water Supply.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1090 ft, casing diameter 12 in., cased to 38 ft. Well was deepened May 1980 and modified Feb. 1984. Prior to May 1980, well depth 205 ft.

DATUM.--Altitude of land-surface datum is 26 ft. Measuring point: Top of casing, 27.73 ft above mean sea level.

REMARKS.--Geophysical log and water-quality records are available in files of district office.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, November 1982 to July 1983, March 1984 to current year.
WATER QUALITY: 1930, 1942-45, 1947-49, 1951-54, 1968, 1983.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 22.40 ft above mean sea level, Jan. 4, 1983; lowest 14.49 ft Sept. 21, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	21.25	21.25	22.34	21.62	20.99	e20.4	19.66	19.07	e18.5	---	---
10	---	20.88	21.57	21.64	21.53	20.82	e20.3	19.67	18.83	e18.3	---	---
15	---	20.70	21.50	21.29	21.54	20.79	e20.2	19.61	e18.8	18.09	---	---
20	---	20.56	21.22	21.23	21.64	30.74	e20.1	19.34	e18.7	17.96	---	---
25	---	21.68	21.88	21.18	21.30	e20.6	e20.0	19.17	e18.7	17.85	---	---
EOM	---	21.63	22.27	21.72	21.19	e20.5	19.88	19.23	e18.6	e17.8	---	---

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	17.39	16.10	15.87	15.30	14.96	14.76	14.87
10	---	---	---	---	---	17.03	16.23	15.76	15.29	14.92	14.59	14.93
15	---	---	---	---	---	16.87	16.21	15.93	15.24	15.07	14.57	14.64
20	---	---	---	---	---	15.71	15.79	15.89	15.06	14.91	14.68	14.53
25	---	---	---	---	---	16.49	16.05	15.49	14.99	14.82	14.54	14.54
EOM	---	---	---	---	---	16.16	16.52	15.36	14.84	14.77	14.60	14.50

e Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC DUCTANCE (UMHOS)	CHLORIDE, DISSOLVED (MG/L AS CL)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
OCT												
13...	1445	1030	44000	16000	7000	6950	840	1200	7200	68	38	140

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	IODIDE, DISSOLVED (MG/L AS I)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT									
13...	94	2200	<.10	.140	39	<.10	140	50	28000

< Actual value is known to be less than the value shown.

HAWAII, ISLAND OF OAHU--Continued

212659158004102. Local number, 3-2600-04.

LOCATION.--Lat 21°26'59", long 158°00'41", Hydrologic Unit 20060000, 30 ft south of Waiahole ditch, and 1.1 mi east southeast of Kipapa School in Mililani. Owner: Honolulu Board of Water Supply.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 815 ft, casing diameter 16 in, cased to 705 ft.

DATUM.--Altitude of land-surface datum is 665 ft. Measuring point: Top of 16-inch casing, 666.30 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, October 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 20.94 ft above mean sea level, Oct. 1, 1983; lowest 17.26 ft above mean sea level, Sept. 23, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.85	20.45	20.24	e20.8	20.60	20.31	19.85	e19.4	18.90	e18.2	17.81	17.51
10	20.72	20.40	e20.2	e20.8	20.61	20.39	19.72	e19.3	18.78	18.15	17.68	17.50
15	20.64	20.29	20.16	20.78	20.48	20.31	19.62	e19.2	18.68	18.15	17.56	17.40
20	20.59	e20.3	20.23	20.73	20.43	20.20	e19.5	e19.2	e18.5	18.15	17.52	17.36
25	20.61	20.23	e20.4	20.68	20.37	20.05	e19.4	19.13	e18.4	18.08	17.38	e17.3
EOM	20.53	20.32	e20.7	20.61	20.31	19.91	e19.5	19.02	e18.3	17.98	17.38	e17.3

WTR YEAR 1984 MAX 20.94 OCT 1, 1983 MIN 17.26 SEPT 23, 1984

e Estimated.

212927158014801. Local number, 3-2901-07.

LOCATION.--Lat 21°29'27", long 158°01'48", Hydrologic Unit 20060000, across the main gage of Wheeler AFB, and 1200 ft south of Wahiawa bridge on Kaukonohua Stream. Owner: U.S. Army.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Dug high-level water-table well, size 8 x 8 ft, length of 30-degree inclined shaft 1,148 ft.

DATUM.--Altitude of land-surface datum is 850 ft. Measuring point: Top of pump chamber floor at recorder, 287.00 ft above mean sea level.

REMARKS.--Water-level recorder is located on the pump chamber floor at the bottom of shaft. Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, November 1938 to current year.
WATER QUALITY: 1966-72, 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 284.40 ft above mean sea level, May 12, 1969; lowest, 269.52 ft above mean sea level, Dec. 5, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	278.23	277.70	277.19	277.02	276.70	276.19	275.60	275.08	274.48	273.92	273.13	272.57
10	278.09	277.54	277.22	276.97	276.61	276.17	275.49	274.92	274.36	273.85	273.22	272.67
15	278.06	277.61	277.32	277.02	276.50	276.05	275.38	274.84	274.21	273.74	272.88	272.59
20	277.95	277.49	277.29	276.78	276.38	276.00	275.30	274.74	273.30	273.66	273.20	272.48
25	277.89	277.53	277.23	276.85	276.38	275.80	275.25	274.69	273.13	273.57	272.98	272.46
EOM	277.73	277.38	277.10	276.79	276.31	275.71	275.10	274.55	273.97	273.26	272.61	272.44

Note: Well being pumped throughout the year.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
NONPUMPING VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	278.44	DEC 2	277.56	FEB 1	276.95	APR 1	275.84	JUL 1	274.10	SEP 2	272.97
NOV 1	277.94	DEC 29	277.35	MAR 1	276.52	MAY 1	275.23	AUG 18	273.26		

Note: Water levels are measured after all pumps are shut off for 2 hours.

212927158014801. Local number, 3-2901-07--Continued.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 27...	0915	170	22.0	16
DEC 08...	0930	165	22.0	18
JAN 23...	1015	180	22.0	18
MAR 14...	0930	160	22.0	18
APR 27...	0930	175	22.5	18
JUN 07...	1530	165	23.0	18
AUG 09...	0830	170	23.0	17
SEP 26...	1045	172	22.5	18

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
SEP 26...	1045	6.7	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARA-CHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
SEP 26...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
SEP 26...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTA (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0

< Actual value is known to be less than the value shown.

HAWAII, ISLAND OF OAHU--Continued

212927158014801. Local number, 3-2901-07--Continued.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984--Continued

DATE	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)
SEP 26...	<3.0	4.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0

DATE	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
SEP 26...	<3.0	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

213327157524401. Local number, 3-3352-01.

LOCATION.--Lat 21°33'27", long 157°52'44", Hydrologic Unit 20060000, at mouth of Kahana Valley, and 700 ft southwest of Kamehameha Highway, Kahana. Owner: Mary E. Foster Estate.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 441 ft, casing diameter 10 in, cased to 177 ft.

DATUM.--Altitude of land-surface datum is 6 ft. Measuring point: Top of "T", 7.31 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: April 1935 to current year.
WATER QUALITY: 1935 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.3 ft above mean sea level, Mar. 29, 1966; lowest measured, 12.61 ft above mean sea level, July 5, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 8	14.43	FEB 16	14.40	MAR 29	13.21	APR 5	13.34	MAY 11	13.42	JUL 5	12.61

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC 08...	1430	260	22.5	34	MAY 11...	1030	260	22.5	34
MAR 29...	1330	260	22.5	35	JUL 05...	1200	250	23.0	35

213446158104901. Local number, 3-3410-08.

LOCATION.--Lat 21°34'46", long 158°10'49", Hydrologic Unit 20060000, 0.5 mi east of Dillingham Airfield, and 1.1 mi southeast of Mokuleia Beach Park. Owner: Waialua Sugar Co., Inc.

AQUIFER.--Basalt of Waianae Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 447 ft, casing diameter 1-inch, cased to 410 ft, revised, perforated from 410 to 447 ft.

DATUM.--Altitude of land-surface datum is 12 ft, revised. Measuring point: Top of 12-inch stilling well, 20.53 ft above mean sea level.

REMARKS.--Water-level recorder was operated January 1963 to February 1972. 1-inch galvanized pipe was installed inside of a 6-inch casing, and space between the two casings grouted on Sept. 13, 1948.

PERIOD OF RECORD.--
WATER LEVEL: January 1919 to current year.
WATER QUALITY: 1919 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.98 ft above mean sea level, Jan. 5, 1969; lowest measured, 16.08 ft above mean sea level, Aug. 6, 1929.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	19.00	JAN 27	19.33	MAY 11	18.48	JUN 15	18.66	AUG 10	18.70	SEP 20	18.81
DEC 14	19.20	MAR 20	18.90								

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 28...	1200	850	22.0	190
DEC 14...	1450	850	21.5	190
JAN 27...	1415	850	22.0	190
MAR 20...	0930	800	22.0	180
MAY 11...	1200	850	22.0	180
JUN 15...	1500	850	22.0	190
AUG 10...	1040	850	22.0	190
SEP 20...	0920	800	22.0	190

214125158013401. Local number, 3-4101-03.

LOCATION.--Lat 21°41'25", long 158°01'34", Hydrologic Unit 20060000, 1500 ft northeast of UH Agriculture Experiment Station in Waialee, and 1.9 mi northeast of Sunset Beach. Owner: State of Hawaii.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 61 ft, casing diamter 8 in, cased to 36 ft.

DATUM.--Altitude of land-surface datum is 22 ft. Measuring point: Top of 4-inch pipe, 21.89 ft above mean sea level.

REMARKS.--Water-quality records for 1929-74 are available in files of district office.

PERIOD OF RECORD.--February 1929 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.60 ft above mean sea level, Nov. 14, 1932; lowest measured, 10.97 ft above mean sea level, July 1, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 14	14.44	DEC 14	14.07	FEB 7	13.98	MAR 29	13.39	MAY 4	13.49	JUL 5	13.31

HAWAII, ISLAND OF MOLOKAI

210425156483001. Local number, 4-0448-02.

LOCATION.--Lat 21°04'25", long 156°48'30", Hydrologic Unit 20050000, 100 ft north of Highway 45, and 0.8 mi west of Pukoo. Owner: P. Friel.

AQUIFER.--East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, size 4 x 6 ft, depth 22 ft.

DATUM.--Altitude of land-surface datum is 19 ft. Measuring point: Top of 2 x 2 in steel plate bolted to top of concrete well wall, 21.23 ft above mean sea level.

REMARKS.--Water-level recorder was operated August 8, 1970 to January 22, 1973. Water-quality records for 1970-1973 are available in files of district office.

PERIOD OF RECORD.--August 1970 to current year.

EXTRMES FOR PERIOD OF RECORD.--Highest water level, 6.11 ft above mean sea level, Nov. 26, 1970; lowest measured, 3.67 ft above mean sea level, Feb. 8, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	4.43	JAN 23	4.19	APR 16	4.02	JUN 4	4.05	JUL 23	4.09	SEP 4	4.23
DEC 12	3.98	MAR 5	4.30								

210402156495801. Local number, 4-0449-01.

LOCATION.--Lat 21°04'02", long 156°49'58", Hydrologic Unit 20050000, 1,800 ft north of Ualapue Fishpond, and 0.5 mi northeast of Kilohana School. Owner: County of Maui.

AQUIFER.--East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, size 4 x 6 ft, depth 42 ft, lined with concrete to 42 ft; two infiltration tunnels, total length 214 ft.

DATUM.--Altitude of land-surface datum is 42 ft. Measuring point: Top of steel plate, 42.42 ft above mean sea level.

REMARKS.--Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: 1938-39, 1941-63, November 1972 to current year.
WATER QUALITY: 1948, 1952-56, 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.05 ft above mean sea level, Jan. 19, 1950; lowest measured, 2.09 ft above mean sea level, Sept. 16, 1975.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	3.61	DEC 6	3.81	MAR 7	3.61	APR 18	3.27	JUN 7	3.38	SEP 6	3.43

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	3.47	JAN 23	3.24	MAR 5	3.38	APR 16	3.20	JUN 4	3.25	SEP 4	3.40

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
DEC 12...	1410	330	20.5	59
APR 18...	1550	330	--	62
JUN 04...	1225	330	--	64
JUL 23...	1225	330	23.0	65

210419156570501. Local number, 4-0457-01.

LOCATION.--Lat 21°04'19", long 156°57'05", Hydrologic Unit 20050000, 0.5 mi northwest of Kakahaia Fishpond, and 0.5 mi northeast of Moku. Owner: County of Maui.

AQUIFER.--Basalt of East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, size 4 x 4 ft, depth 38 ft, lined with concrete to 38 ft, two infiltration tunnels, total length 229 ft.

DATUM.--Altitude of land-surface datum is 38 ft. Measuring point: Top of steel plate, 37.40 ft above mean sea level.

REMARKS.--Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: June 1947 to November 1960, January 1962 to February 1963, November 1972 to current year.
WATER QUALITY: 1948, 1954-56, 1960, 1962, 1971, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.66 ft above mean sea level, Dec. 5, 1950; lowest measured, 1.47 ft above mean sea level, June 24, 1955.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, OCTOBER 1982 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 6, 1982	2.24	JAN 23, 1984	1.94	JUL 23, 1984	2.09

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 24...	1725	220	23.5	37	APR 16...	1650	240	24.0	45
DEC 12...	1455	250	23.0	50	JUN 04...	1320	280	23.0	55
MAR 05...	1755	220	23.0	41	SEP 04...	1315	390	23.0	85

HAWAII, ISLAND OF MOLOKAI--Continued

210605157012001. Local number, 4-0601-01.

LOCATION.--Lat 21°06'05", long 157°01'20", Hydrologic Unit 20050000, 0.6 mi north of Kaunakakai School, and 0.9 mi east of Kalanianaole Colony. Owner: Molokai Ranch.

AQUIFER.--Basalt of East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 59 ft, casing diameter 12 in, cased to 20 ft.

DATUM.--Altitude of land-surface datum is 51 ft. Measuring point: Top of 15-inch surface casing, 51.95 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: May 1954 to current year.
WATER QUALITY: 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.30 ft above mean sea level, Jan. 20, 1969; lowest measured, 1.60 ft above mean sea level, Dec. 5, 1964.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	2.76	JAN 26	2.63	APR 19	2.64	JUN 6	2.69	JUL 23	2.85	SEP 6	2.92
DEC 14	2.49	MAR 7	2.68								

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 26...	0805	330	24.5	37	APR 19...	0905	280	24.0	24
DEC 14...	1525	330	24.5	36	JUN 06...	1510	290	24.5	24
JAN 26...	1130	280	24.5	24	JUL 23...	1505	320	24.5	33
MAR 07...	0710	270	23.0	21	SEP 06...	0800	360	24.0	40

210711157000501. Local number, 4-0700-01.

LOCATION.--Lat 21°07'11", long 157°00'05", Hydrologic Unit 20050000, 2.3 mi northeast of Kaunakakai, and 2.4 mi north of Kamiloloa. Owner: Kaluakoi Corporation.

AQUIFER.--East Molokai Volcanic Series.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1,080 ft, casing diameter 20 in, cased to 956 ft, perforated from 956 to 1056 ft.

DATUM.--Measuring point: Top of casing, 979.00 ft, land-surface datum.

REMARKS.--Water-quality records for 1973-75 are available in files of district office.

PERIOD OF RECORD.--July 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 975.40 ft below land-surface datum, Jan. 25, 1983; lowest measured, 976.10 ft below land-surface datum, July 13, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	975.69	JAN 25	975.40	APR 19	975.47	JUL 27	975.57

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	975.57	JAN 24	975.78	APR 17	975.88	JUL 24	975.78

203908156041201. Local number, 6-3904-01.

LOCATION.--Lat 20°39'08", long 156°04'12", Hydrologic Unit 20020000, 1300 ft northwest of Kakanoni Point, and 0.7 mi west of Kipahulu School. Owner: Cordelia May.

AQUIFER.--Hana Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 150 ft, casing diameter 4 in.

REMARKS.--Water-quality records for 1978 are available in files of district office.

DATUM.--Altitude of land-surface datum is 133 ft. Measuring point: Top of 1-inch pipe nipple, 133.61 ft above mean sea level.

PERIOD OF RECORD.--July 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.65 ft above mean sea level, Oct. 2, 1980; lowest measured, 0.99 ft above mean sea level, June 13 and Aug. 8, 1979

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	2.00	JAN 6	1.96	MAR 31	1.12	MAY 11	2.06	JUN 30	1.66	AUG 18	1.13
NOV 18	2.03	FEB 16	1.63								

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	1.60	JAN 5	1.84	FEB 6	1.96	MAR 30	1.25	MAY 3	1.26	JUN 28	1.04
NOV 22	1.53										

203912156255901. Local number, 6-3925-01.

LOCATION.--Lat 20°39'12", long 156°25'59", Hydrologic Unit 20020000, 0.8 mi east of Keawalai Church, and 0.9 mi southeast of intersection of Kihei and Makena roads. Owner: State of Hawaii.

AQUIFER.--Hana Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 382 ft, casing diameter 8 in, cased to 343 ft, revised, perforated from 343 to 363 ft.

DATUM.--Altitude of land-surface datum is 352 ft. Measuring point: Top of 2-inch pipe attached to the casing cover, 352.29 ft above mean sea level.

REMARKS.--Water-quality records for 1964 are available in files of district office.

PERIOD OF RECORD.--August 1964, June 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.47 ft above mean sea level, Aug. 24, 1964; lowest measured, 0.41 ft below mean sea level, May 4, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	0.05	JAN 12	-.14	APR 9	-.16	MAY 21	-.17	JUL 2	0.05	AUG 24	0.05
DEC 5	-.16	FEB 28	-.12								

HAWAII, ISLAND OF MAUI--Continued

204827156242201. Local number, 6-4824-01.

LOCATION.--Lat 20°48'27", long 156°24'22", Hydrologic Unit 20829000, on Waiakoa Road 1,000 ft south of intersection with Kalaloa Gulch, and 4 mi east of Kihei. Owner: State of Hawaii.

AQUIFER.--Kula Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 647 ft, casing diameter 12 in, cased to 598 ft, screened from 598 to 638 ft.

DATUM.--Altitude of land-surface datum is 593 ft. Measuring point: Top of 3-inch pipe attached to the steel casing cover, 594.75 ft above mean sea level.

REMARKS.--Water-quality records for 1971, 1973 are available in files of district office.

PERIOD OF RECORD.--March 1971 and May 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.20 ft above mean sea level, Jan. 17, 1974; lowest measured, 3.65 ft above mean sea level, Jan. 27, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	4.10	JAN 17	4.05	APR 11	4.20	MAY 21	3.76	JUL 3	3.80	AUG 24	3.75
DEC 7	3.71	FEB 27	4.05								

204818156310301. Local number, 6-4831-01.

LOCATION.--Lat 20°48'18", long 156°31'03", Hydrologic Unit 20020000, on sugar plantation road 0.7 mi north of Maalaea, and 0.9 mi southwest of intersection of Honoapoolani Highway and Kihei Road. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 219 ft, casing diameter 8 in, cased to 187 ft.

DATUM.--Altitude of land-surface datum is 166 ft. Measuring point: Top of 8-inch casing, 166.60 ft above mean sea level.

REMARKS.--Water-quality records for 1965-67 are available in files of district office. Water-level recorder was operated January to July 1974.

PERIOD OF RECORD.--September 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.76 ft above mean sea level, Nov. 30, 1983; lowest measured, 4.74 ft above mean sea level, Mar. 16, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	5.57	JAN 12	5.41	APR 6	5.18	MAY 16	5.26	JUL 2	5.36	AUG 23	5.39
NOV 30	5.30	FEB 23	5.42								

HAWAII, ISLAND OF MAUI--Continued

204909156281401. Local number, 6-4928-02.

LOCATION.--Lat 20°48'27", long 156°28'14", Hydrologic Unit 20020000, at Puunene Airport on Mokulele Highway, and 2.5 mi north of intersection with Kihei Road, Kihei. Owner: Hawaiian Commercial and Sugar Co.

AQUIFER.--Honomanu Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, 6 x 9 ft vertical shaft, depth 53 ft.

DATUM.--Altitude of land-surface datum is 50 ft. Measuring point: Top of angle iron at well, 50.08 ft above mean sea level.

REMARKS.--Water-quality records for 1973 are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, March 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.09 ft above mean sea level, Jan. 12, 1980; lowest, 3.05 ft above mean sea level, Mar. 5-6, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	3.97	3.79	3.67	3.97	4.05	4.05	3.61	3.83	3.80	3.82	3.77	3.89
10	4.04	3.77	3.55	3.94	3.99	3.97	3.65	3.77	3.77	3.75	3.78	3.83
15	4.00	3.86	3.54	4.00	4.00	3.84	3.80	3.77	3.78	3.69	3.67	3.82
20	4.07	3.92	3.67	4.02	3.99	3.82	3.99	3.70	3.79	3.74	3.68	3.80
25	4.01	3.82	3.77	3.97	4.00	3.69	3.97	3.69	3.81	3.75	3.75	3.77
EOM	3.94	3.72	4.01	4.02	3.95	3.60	3.87	3.79	3.78	3.77	3.83	3.79

WTR YEAR 1984 MAX 4.11 OCT 22, 1983 MIN 3.50 DEC 14, 1983

205140156304501. Local number, 6-5130-01.

LOCATION.--Lat 20°51'40", long 156°30'45", Hydrologic Unit 20020000, 0.5 mi northwest of Waikapu, and 1.0 mi southeast of Wailuku Heights. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 757 ft, casing diameter 8 in, cased to 569 ft, perforated from 569 to 609 ft.

DATUM.--Altitude of land-surface datum is 551 ft. Measuring point: Top of 6-inch pipe coupling, 551.33 ft above mean sea level.

PERIOD OF RECORD.--June 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.90 ft above mean sea level, Oct. 13, 1982; lowest measured, 11.36 ft above mean sea level, Jan. 27, 1976.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	30.90	JAN 17	27.22	APR 12	21.47	MAY 23	20.68	JUL 8	18.92	AUG 24	18.25
NOV 30	26.39	FEB 28	23.89								

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	17.53	JAN 12	22.34	APR 6	21.12	MAY 23	19.88	JUL 5	19.43	AUG 29	17.95
NOV 30	16.76	FEB 23	23.57								

HAWAII, ISLAND OF MAUI--Continued

205154156303801. Local number, 6-5130-02.

LOCATION.--Lat 20°51'54", long 156°30'38", Hydrologic Unit 20020000, 0.6 mi northwest of Waikapu, and 1.0 mi southeast of Wailuku Heights. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1020 ft, casing diameter 20 in, cased to 520 ft, perforated from 520 to 570 ft.

DATUM.--Altitude of land-surface datum is 518 ft. Measuring point: Top of casing, 519.33 ft above mean sea level.

REMARKS.--Water-quality records for 1974 are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, August 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.42 ft above mean sea level, Aug. 8, 1983; lowest, 13.65 ft above mean sea level, December 9, 14, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, AUGUST TO SEPTEMBER 1983
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG 5	14.35	AUG 15	14.23	AUG 25	14.08	SEP 5	14.10	SEP 15	14.04	SEP 25	14.03
AUG 10	14.25	AUG 20	14.17	AUG 31	14.13	SEP 10	14.04	SEP 20	14.03	SEP 31	14.02

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.05	13.91	13.76	13.71	13.82	13.80	14.01	14.26	14.24	14.22	14.08	13.98
10	14.05	13.92	13.71	13.75	13.79	13.83	14.09	14.18	14.20	14.20	14.15	14.00
15	14.05	13.91	13.78	13.86	13.80	13.84	14.10	14.18	14.19	14.11	14.00	13.96
20	14.02	13.86	13.79	13.71	13.77	13.97	14.20	14.17	14.17	14.12	14.06	13.93
25	13.97	13.86	13.76	13.77	13.84	13.92	14.26	14.28	14.13	14.11	14.01	13.93
EOM	13.92	13.78	13.73	13.83	13.85	13.93	14.16	14.22	14.20	14.14	13.96	13.82

WTR YEAR 1984 MAX 14.35 MAY 26, 1984 MIN 13.65 DEC 9, 14, 1983

205419156304401. Local number, 6-5430-03.

LOCATION.--Lat 20°54'19", long 156°30'44", Hydrologic Unit 20020000, 2,000 ft north of Puuohala Village, and 0.5 mi northwest of Wailuku Sugar Mill reservoir. Owner: Wailuku Sugar Co.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 580 ft, 1.5-inch PVC casing, cased to 400 ft, perforated from 400 to 580 ft.

DATUM.--Altitude of land-surface datum is 415 ft. Measuring point: Top of 1-inch galvanized pipe, 416.75 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder: August 1982 to February 1984.
Occasional measurements: March 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.09 ft above mean sea level, Dec. 31, 1982; lowest measured, 16.02 ft above mean sea level, Aug. 14, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, OCTOBER 1983 TO FEBRUARY 1984
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	18.15	OCT 31	18.34	NOV 25	18.26	DEC 20	18.31	JAN 15	18.41	FEB 10	18.30
OCT 10	18.19	NOV 5	18.28	NOV 30	18.19	DEC 25	18.24	JAN 20	18.46	FEB 15	18.15
OCT 15	18.15	NOV 10	18.27	DEC 5	18.17	DEC 31	18.38	JAN 25	18.44	FEB 20	18.04
OCT 20	18.21	NOV 15	18.32	DEC 10	18.17	JAN 5	18.35	JAN 31	18.36	FEB 25	17.93
OCT 25	18.32	NOV 20	18.31	DEC 15	18.24	JAN 10	18.36	FEB 5	18.36	FEB 29	17.87

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, MARCH TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 1	17.83	APR [illegible]	17.46	MAY 22	17.09	JUL 3	16.43	AUG 14	16.02

205405156305401. Local number, 6-5430-05.

LOCATION.--Lat 20°54'59", long 156°30'56", Hydrologic Unit 20020000, 1.0 mi southwest of intersection of Malaihi Road and Highway 33, and 1.2 mi south of Waihee. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1400 ft, casing diameter 10 in, cased to 400 ft.

DATUM.--Altitude of land-surface datum is 380 ft. Measuring point: Top of 6-inch pipe coupling, 381.68 ft above mean sea level.

REMARKS.--Water-quality records for 1982 are available in files of district office.

PERIOD OF RECORD.--August 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.68 ft above mean sea level, Aug. 5, 1983; lowest measured, 14.21 ft above mean sea level, Aug. 14, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, AUGUST 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG 5	16.68	AUG 24	16.52	AUG 26	16.45

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	15.92	JAN 16	16.08	APR 9	15.35	MAY 22	15.31	JUL 3	14.59	AUG 14	14.21
DEC 6	15.93	MAR 1	15.70								

205437156310501. Local number, 6-5431-01.

LOCATION.--Lat 20°54'37", long 156°31'05", Hydrologic Unit 20020000, 0.5 mi southwest of Waiehu Village, and 1.4 mi southwest of intersection of Malaihi Road and Kahekili Highway. Owner: Wailuku Sugar Co.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 555 ft, 1.5-inch PVC casing, cased to 515 ft, perforated from 515 to 555 ft.

DATUM.--Altitude of land-surface datum is 493 ft. Measuring point: Top of 1.5-inch PVC casing, 492.51 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, August 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.52 ft above mean sea level, Jan. 2, 1983; lowest 13.78 ft above mean sea level, Aug. 20, 31, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.90	15.97	15.87	e16.0	16.00	15.78	15.26	15.00	14.92	14.37	14.03	13.87
10	15.90	15.97	e15.8	e16.0	15.93	15.70	15.22	15.08	14.87	14.30	13.92	13.93
15	15.87	15.98	e15.9	e16.0	15.81	15.59	15.22	15.21	14.69	14.32	13.87	13.92
20	15.96	16.00	e15.9	16.10	15.72	15.55	15.13	15.24	14.58	14.17	13.85	13.98
25	16.03	15.94	e15.9	16.15	15.63	15.45	15.08	15.30	14.48	14.10	13.87	13.88
EOM	16.03	15.88	e16.0	15.97	15.56	15.36	15.04	15.29	14.41	14.05	13.83	13.83

WTR YEAR 1984 MAX 16.18 JAN 19, 1984 MIN 13.78 AUG 20, 31, 1984

e Estimated.

HAWAII, ISLAND OF MAUI--Continued

205552156193101. Local number, 6-5519-01.

LOCATION.--Lat 20°55'52", long 156°19'31", Hydrologic Unit 20020000, at Haiku School 1.0 mi north of Haiku, and 2.7 mi northeast of Paia. Owner: State of Hawaii.

AQUIFER.--Kula Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 400 ft, casing diameter 8 in, cased to 363 ft, perforated from 363 to 383 ft.

DATUM.--Altitude of land-surface datum is 365 ft. Measuring point: Top of 2.5-inch pipe coupling attached to the casing cover, 366.26 ft above mean sea level.

REMARKS.--Water-quality records for 1967, 1980 are available in files of district office.

PERIOD OF RECORD.--May 1967, December 1970, May 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.08 ft above mean sea level, Nov. 23, 1982; lowest measured, 4.75 ft above mean sea level, Mar. 7, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	5.77	JAN 9	5.47	APR 2	5.24	MAY 7	5.32	JUN 28	5.39	AUG 23	5.57
NOV 28	5.51	FEB 17	5.44								

205617156311101. Local number, 6-5631-01.

LOCATION.--Lat 20°56'17", long 156°31'11", Hydrologic Unit 20020000, 2,000 ft southwest of Waihee Farm, and 1.3 mi northwest of Waiehu Golf Course. Owner: Wailuku Sugar Co.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 300 ft, 1.5-inch PVC casing, cased to 260 ft, perforated from 260 to 300 ft.

DATUM.--Altitude of land-surface datum is 248 ft. Measuring point: Top of 1.5-inch PVC casing, 248.05 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, August 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.83 ft above mean sea level, Dec. 6, 1982; lowest 15.41 ft above mean sea level, Sept. 29-30, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	16.62	16.51	16.40	16.42	16.42	16.30	16.06	15.98	15.98	15.75	15.53	15.47
10	16.61	16.47	16.36	16.40	16.39	16.32	16.05	15.94	15.93	15.70	15.50	15.46
15	16.60	16.47	16.36	16.41	16.34	16.25	16.04	15.95	15.90	15.66	15.47	15.47
20	16.58	16.48	16.38	16.43	16.32	16.23	16.03	15.95	15.86	15.64	15.46	15.47
25	16.58	16.46	16.42	16.42	16.31	16.18	16.03	15.99	15.83	15.62	15.44	15.45
EOM	16.53	16.42	16.44	16.42	16.30	16.11	15.99	16.02	15.79	15.58	15.46	15.43

WTR YEAR 1984 MAX 16.64 OCT 1-5, 9-10, 1983 MIN 15.41 SEP 29-30, 1984

HAWAII, ISLAND OF MAUI--Continued

205856156400101. Local number, 6-5840-01.

LOCATION.--Lat 20°58'56", long 156°40'01", Hydrologic Unit 20020000, on sugar plantation road 0.9 mi east of Kahana, and 1.5 mi southwest of Honokahua. Owner: State of Hawaii.

AQUIFER.--Honolua Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 274 ft, casing diameter 8 in, cased to 264 ft, perforated from 264 to 274 ft. Hole was drilled to depth of 284 ft but plugged back 10 ft with cement.

DATUM.--Altitude of land-surface datum is 257 ft. Measuring point: Top of 2.2-inch pipe coupling attached to casing cover, 257.34 ft above mean sea level.

REMARKS.--Water-quality records for 1964, 1980 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, March 1972 to July 1975.
Water-level recorder, August 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.68 ft above mean sea level, Sept. 20, 1981; lowest, 2.43 ft above mean sea level Mar. 25, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	3.19	2.90	2.80	2.99	3.02	3.08	2.82	3.00	3.03	3.18	3.12	3.35
10	3.15	2.82	2.71	2.96	2.93	3.02	2.89	2.91	3.06	3.09	3.14	3.32
15	3.10	2.82	2.78	3.05	2.90	2.96	2.99	2.93	3.13	3.05	3.11	3.33
20	3.07	2.84	2.89	3.00	2.92	2.96	3.03	2.88	3.12	3.15	3.19	3.30
25	3.04	2.78	2.99	2.92	2.93	2.83	3.01	2.98	3.11	3.13	3.17	3.26
EOM	2.88	2.77	3.01	2.99	3.01	2.84	2.91	3.04	3.14	3.15	3.34	3.30

WTR YEAR 1984 MAX 3.48 SEP 4, 1984 MIN 2.61 DEC 8, 1983

HAWAII, ISLAND OF HAWAII

190602155325901. Local number, 8-0632-01.

LOCATION.--Lat 19°06'02", long 155°32'59", Hydrologic Unit 20010000, 0.5 mi northeast of Kau Sugar Mill, and 3.3 mi northeast of Naalehu. Owner: Kau Sugar Company.

AQUIFER.--Ninole Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table, depth 140 ft, casing diameter 14 in, cased to 105 ft, perforated from 105 to 125 ft.

DATUM.--Altitude of land-surface datum is 102 ft. Measuring point: 1-inch hole in pump base, 103.26 ft above mean sea level.

REMARKS.--Water-quality records for 1972 and 1973 are available in files of district office.

PERIOD OF RECORD.--April 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.39 ft above mean sea level, October 19, 1978; lowest measured, 0.58 ft below mean sea level, July 29, 1981.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, JANUARY TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 31	1.89	MAR 24	1.63	MAY 9	1.67	JUL 11	0.84	AUG 31	1.81

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	2.06	JAN 16	1.25	MAR 5	0.88	MAY 15	0.43	JUL 20	1.70	SEP 24	2.37

192728154530101. Local number, 8-2783-01.

LOCATION.--Lat 19°27'28", long 154°53'01", Hydrologic Unit 20010000, 0.8 mi southeast of Pawai crater in Keahialaka, and 1.9 mi north of Opihikao road junction, south Pahoa. Owner: State of Hawaii.

AQUIFER.--Hilina Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 319 ft, casing diameter 8 in, cased to 279 ft, perforated from 279 to 319 ft.

DATUM.--Altitude of land-surface datum is 273 ft. Measuring point: Top of casing, 273.00 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: March 1972 to current year.
WATER QUALITY: 1962, 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.77 ft above mean sea level, Dec. 6, 1982; lowest measured, 0.97 ft above mean sea level, July 26, 1976.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 6	2.77	FEB 14	2.44	APR 6	2.13	JUN 17	1.98	AUG 17	2.50

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	2.00	MAR 1	1.98	APR 26	1.73	MAY 29	1.66	JUL 27	2.43	SEP 24	2.03
JAN 24	2.21										

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 19...	1215	12100	53.0	4900	MAY 29...	1310	18000	55.0	5900
JAN 24...	0920	17000	55.0	7000	JUL 27...	1035	19000	54.0	6800
MAR 01...	1410	11000	53.0	4600	SEP 24...	0940	19000	54.0	6400
APR 26...	1250	19500	55.0	6600					

193017154502101. Local number, 8-3080-02.

LOCATION.--Lat 19°30'17", long 154°50'21", Hydrologic Unit 20010000, 0.5 mi south of intersection of Highway 132, and Highway 137 near Pahoa. Owner: County of Hawaii.

AQUIFER.--Puna Volcanic Series, Holocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, depth 46 ft, casing diameter 66 in, with two horizontal infiltration tunnels 2 x 50 ft extending in opposite directions from 3 ft above bottom of well.

DATUM.--Altitude of land-surface datum is 39 ft. Measuring point: Top of steel manhole cover at 1-inch hole, 39.50 ft above mean sea level.

REMARKS.--Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: March 1972 to current year.
WATER QUALITY: 1972-81, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.16 ft above mean sea level, Dec. 6, 1982; lowest measured, 1.71 ft above mean sea level, July 11, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	2.98	MAR 1	2.77	APR 26	3.25	MAY 29	2.38	JUL 27	3.56	SEP 24	3.09
JAN 24	2.88										

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 19...	1110	1150	25.5	180
JAN 24...	1300	1250	25.5	240
MAR 01...	1310	1300	25.5	240
MAY 29...	1400	1270	25.5	240
SEP 24...	1035	1250	26.0	240

HAWAII, ISLAND OF HAWAII--Continued

193339154594801. Local number, 8-3389-01.

LOCATION.--Lat 19°33'39", long 154°59'48", Hydrologic Unit 20010000, 3.5 mi northwest of Pahoa airstrip, and 5.5 mi southeast of Keaau. Owner: County of Hawaii.

AQUIFER.--Puna Volcanic Series, Holocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 475 ft, casing diameter 8 in, cased to 403 ft, perforated from 403 to 475 ft.

DATUM.--Altitude of land-surface datum is 427 ft. Measuring point: Top of casing, 428.14 ft above mean sea level.

REMARKS.--Water-quality records for 1961 are available in files of district office.

PERIOD OF RECORD.--September 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.37 ft above mean sea level, Mar. 26, 1979; lowest measured, 15.99 ft above mean sea level, Apr. 25, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	17.93	JAN 24	16.99	MAR 1	17.04	APR 26	16.70	MAY 29	16.99	AUG 1	16.87

194134155005601. Local number, 8-4100-01.

LOCATION.--Lat 19°41'34", long 155°00'56", Hydrologic Unit 20010000, 5.5 mi southeast of Hilo Post Office, and 5.0 mi northeast of Keaau. Owner: Hawaiian Paradise Corporation.

AQUIFER.--Kau Volcanic Series, Holocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 55 ft, casing diameter 10 in, cased to 39 ft, perforated from 39 to 55 ft.

DATUM.--Altitude of land-surface datum is 45 ft. Measuring point: Top of casing, 46.84 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: November 1971 to current year.
WATER QUALITY: 1971, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.73 ft above mean sea level, Apr. 9, 1980; lowest measured, 2.24 ft above mean sea level, Mar. 9, 1972.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	4.64	JAN 31	4.72	APR 13	4.07	JUN 5	5.31	AUG 9	5.14

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 18...	1040	1400	20.0	360
JAN 31...	1030	800	19.5	280
APR 13...	0925	1350	19.5	380
JUN 05...	1455	1400	20.0	400
AUG 09...	1340	1500	20.0	410

194222155035101. Local number, 8-4203-04.

LOCATION.--Lat 19°42'22", long 155°03'51", Hydrologic Unit 20010000, 0.5 mi east of Hawaii Technical School, and 1.0 mi south of Hilo airport terminal. Owner: Hawaii Electric Light Company.

AQUIFER.--Kahuku Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 201 ft, casing diameter 16 in, cased to 60 ft.

DATUM.--Altitude of land-surface datum is 47 ft. Measuring point: Top of 3-inch nipple above casing; 46.54 ft above mean sea level.

REMARKS.--Water-quality records for 1961 are available in files of district office. Water level affected by pumping of nearby industrial wells.

PERIOD OF RECORD.--July 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.67 ft above mean sea level, Mar. 11, 1979; lowest measured, 5.87 ft above mean sea level, May 17, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	7.74	FEB 11	6.74	APR 20	5.95	JUL 18	6.09	SEP 21	6.82

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 10	6.95	FEB 10	6.69	APR 19	6.54	MAY 30	6.35	AUG 2	6.49

195947155485801. Local number, 8-5948-01.

LOCATION.--Lat 19°59'47", long 155°48'58", Hydrologic Unit 20010000, 0.7 mi east of Hapuna Beach Park, and 3.1 mi southeast of Kawaihae. Owner: State of Hawaii.

AQUIFER.--Hamakua Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 268 ft, casing diameter 10 in, cased to 246 ft, screened from 246 to 266 ft.

DATUM.--Altitude of land-surface datum is 244 ft. Measuring point: Hole in pumpbase, 246.47 ft above mean sea level.

REMARKS.--Water from this well is used for irrigation.

PERIOD OF RECORD.--
WATER LEVEL: April 1970, March 1973 to current year.
WATER QUALITY: 1970, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.50 ft above mean sea level, Sept. 26, 1984; lowest measured, 1.40 ft, above mean sea level, June 22, 1973, June 3, 1974.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 15	3.84	MAR 15	3.89	APR 27	3.63	JUN 7	4.00	AUG 6	4.20	SEP 26	4.50
FEB 7	3.72										

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV 15...	1055	1750	26.0	450
FEB 07...	1120	1650	26.0	450
MAR 15...	1335	1650	26.0	460
APR 27...	1355	1650	26.0	450
JUN 07...	1255	1700	26.0	460
AUG 06...	1315	1650	26.0	460
SEP 26...	1525	1650	26.0	450

HAWAII, ISLAND OF HAWAII--Continued

200132155471001. Local number, 8-6147-01.

LOCATION.--Lat 20°01'32", long 155°47'10", Hydrologic Unit 20010000, on Highway 26, 3.1 mi east of Kawaihae, and 2.8 mi northeast of Hapuna Beach Park. Owner: State of Hawaii.

AQUIFER.--Pololu Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1,008 ft, casing diameter 8 in, cased to 997 ft, perforated from 997 to 1,008 ft. Hole was drilled to 1,040 ft but was finally plugged back to 1,008 ft.

DATUM.--Altitude of land-surface datum is 982 ft. Measuring point: Top of pipe coupling on casing cover, 983.1 ft above mean sea level.

REMARKS.--Water-quality records for 1963 and 1964 are available in files of district office.

PERIOD OF RECORD.--June to July 1963, June 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.20 ft above mean sea level, Aug. 23, 1978, lowest measured, 4.40 ft above mean sea level Sept. 20, 1976.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 15	5.83	MAR 15	5.70	APR 27	5.77	JUN 7	5.98	AUG 6	6.06	SEP 26	6.04
FEB 7	5.95										

201603155521801. Local number, 8-7652-01.

LOCATION.--Lat 20°16'03", long 155°52'18", Hydrologic Unit 20010000, 0.3 mi west of Upolu Point Airfield, 3.1 mi northwest of Hawi, and 1.9 mi west of Hoea Camp. Owner: Kohala Corporation.

AQUIFER.--Pololu Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, with horizontal infiltration tunnels from pump sump.

DATUM.--Altitude of land-surface datum is 33 ft. Measuring point: Top of 4-inch steel I-beam placed across sump, 7.75 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: March 1973 to current year.
WATER QUALITY: 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.09 ft above mean sea level, Aug. 22, 1974; lowest measured, 1.45 ft above mean sea level, July 9, 1975, Jan. 16, 1980.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 15	2.68	MAR 7	2.50	APR 27	2.15	JUN 7	2.43	AUG 6	2.67	SEP 26	2.64
JAN 18	2.75										

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV 15...	1300	2100	23.0	610
JAN 18...	0925	2150	22.0	610
MAR 07...	0905	2200	22.0	620
APR 27...	1215	2350	22.0	650
JUN 07...	1030	2450	22.0	610
AUG 06...	1055	2350	22.0	650
SEP 26...	1355	2400	23.0	610

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF KAUAI								
220018159444701	2-0044-10	22 00 18	159 44 47	83-11-09	1105	550	24.0	81
				84-01-10	1115	560	24.0	80
				84-02-29	1130	580	24.0	82
				84-03-29	1130	560	24.0	82
				84-05-31	1140	570	24.0	83
				84-07-30	1110	560	24.0	82
220018159444702	2-0044-13	22 00 18	159 44 47	83-11-09	1105	470	24.0	79
				84-01-10	1115	510	24.0	79
				84-02-29	1110	560	24.0	79
				84-03-29	1115	550	24.0	80
				84-05-31	1140	540	24.0	80
				84-07-30	1115	550	24.0	86
220016159442701	2-0044-15	22 00 16	159 44 27	83-11-09	1015	5000	23.5	1400
				84-01-10	1010	3700	24.0	1100
				84-02-29	1025	3900	24.0	1200
				84-03-29	1030	3600	24.0	1400
				84-05-31	1020	3750	24.5	1200
				84-07-30	1025	3620	24.0	1500
220134159205401	2-0120-02	22 01 34	159 20 54	83-11-15	1210	830	25.0	130
				83-12-21	1110	820	24.0	140
				84-02-28	1515	920	25.0	140
				84-05-23	1500	750	25.0	110
				84-09-19	1410	800	27.5	120
220148159453501	2-0145-10	22 01 48	159 45 35	83-11-08	1440	1300	22.0	280
				84-02-29	1210	1010	23.5	170
220354159205602	2-0320-03	22 03 54	159 20 56	84-05-29	0900	410	24.0	49
				84-07-26	1030	400	24.5	46
220341159453901	2-0345-04	22 03 41	159 45 39	83-11-08	1345	1900	23.0	460
				84-01-10	1310	1200	24.0	460
				84-02-29	1325	1600	24.0	470
				84-03-29	1315	1480	24.0	480
				84-07-30	1315	1500	24.0	500
220530159450401	2-0545-01	22 05 30	159 45 04	83-11-08	1325	950	23.5	160
				84-02-29	1400	950	24.0	160
				84-03-29	1410	940	24.0	160
				84-05-31	1420	930	24.5	160
				84-07-30	1325	950	24.0	160
220827159185401	2-0818-01	22 08 27	159 18 54	84-03-26	1100	235	23.5	20
				84-05-29	0930	230	24.0	19
220826159185401	2-0818-02	22 08 26	159 18 54	83-10-19	1430	220	23.5	19
				83-12-09	1000	260	24.0	20
				84-01-31	1355	230	24.0	18
				84-07-26	0845	220	24.0	20
221141159252501	2-1125-01	22 11 41	159 25 25	84-07-27	1300	170	24.0	16
				84-09-19	0845	165	23.0	14
221141159252502	2-1125-02	22 11 41	159 25 25	84-01-31	1210	160	23.0	14
				84-03-23	1045	155	24.0	14
				84-05-29	1000	155	24.5	14
221150159264501	2-1126-01	22 11 50	159 26 45	84-07-27	1000	185	23.0	15
221201159293401	2-1229-03	22 12 01	159 29 34	83-10-18	1215	220	23.0	22
				83-12-09	1200	220	23.0	23
				84-03-23	1405	222	23.0	23
				84-05-29	1130	230	23.5	24
				84-07-24	1230	230	24.0	24

AVAILABLE

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
				HAWAII, ISLAND OF KAUAI--Continued				
221247159324801	2-1232-01	22 12 47	159 32 48	83-12-09	1315	140	22.5	18
				84-01-30	1205	120	23.0	19
				84-05-29	1245	140	23.0	18
				84-07-24	1400	140	22.5	18
				84-09-19	1030	135	22.5	18
221318159335901	2-1333-01	22 13 18	159 33 59	83-12-09	1245	210	22.0	20
				84-05-29	1215	220	22.0	18
				84-07-24	1330	205	23.0	20
215454159274201	2-5427-01	21 54 54	159 27 42	83-12-21	1400	240	24.0	24
				84-03-05	1330	250	23.5	24
				84-04-05	1345	255	23.5	24
				84-07-31	1100	250	23.5	25
215536159263501	2-5526-01	21 55 36	159 26 35	83-12-21	1320	230	24.0	20
				84-07-31	1200	250	24.0	22
215528159303001	2-5530-02	21 55 28	159 30 30	83-11-09	1440	260	23.0	25
				84-03-05	1250	260	23.5	26
				84-05-23	1105	250	24.0	26
				84-07-31	1010	250	24.5	28
215535159302601	2-5530-03	21 55 35	159 30 26	84-01-11	1145	215	24.5	23
				84-04-05	1230	210	24.5	24
				84-05-23	1115	210	24.5	22
				84-07-31	1000	210	24.5	24
215522159342601	2-5534-03	21 55 22	159 34 26	84-05-23	1010	490	24.0	46
215635159355001	2-5635-01	21 56 35	159 35 50	83-11-07	1410	760	23.0	140
				84-03-05	1010	740	23.0	140
				84-04-05	1000	760	23.0	140
				84-05-23	0940	750	23.5	140
				84-07-19	1235	770	23.5	140
215635159355002	2-5635-02	21 56 35	159 35 50	84-07-19	1245	800	24.0	210
215803159401201	2-5840-01	21 58 03	159 40 12	84-01-11	0915	610	24.5	120
				84-03-05	0845	600	24.5	130
				84-04-05	0845	620	24.5	120
215854159424601	2-5842-02	21 58 54	159 42 46	83-11-09	0925	720	24.0	100
				84-01-10	0920	650	23.5	92
				84-05-31	0920	700	24.5	98
				84-07-30	0925	710	24.0	100
215901159235301	2-5923-01	21 59 01	159 23 50	83-12-21	1545	300	24.0	18
				84-05-30	1325	270	25.0	16
215906159395601	2-5939-01	21 59 06	159 39 56	83-11-07	1300	680	23.5	100
				84-01-11	0940	660	24.5	70
				84-03-05	0920	670	24.5	90
				84-05-31	1510	660	24.5	170
				84-07-31	0925	650	24.5	170
215937159434201	2-5943-01	21 59 37	159 43 42	83-11-09	0950	1100	24.0	200
				84-01-10	0955	1050	24.0	210
				84-02-29	0950	1110	24.0	190
				84-03-29	0955	1000	24.0	210
				84-05-31	0955	1030	24.5	200
				84-07-30	1000	1060	24.0	220

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
211646157465201	3-1646-01	21 16 46	157 46 52	83-10-12	1025	800	22.0	180
				83-12-01	0930	700	22.5	160
				84-01-16	1250	630	24.5	130
				84-03-07	1415	650	23.5	150
				84-04-19	1330	700	23.0	160
				84-06-05	1345	740	24.0	170
				84-07-30	1130	720	23.0	160
				84-09-13	0945	800	22.5	180
211832157515501	3-1851-19A	21 18 32	157 51 55	83-10-12	1600	24000	23.5	8800
				83-12-02	1600	26000	23.5	9000
				84-01-18	1530	24000	23.5	8500
				84-03-08	1215	25000	23.5	9100
				84-04-19	1550	24000	23.5	9100
				84-06-05	1540	25000	23.5	9100
				84-08-03	1525	24000	23.5	8900
				84-09-13	0900	24000	23.5	8900
211832157515502	3-1851-19B	21 18 32	157 51 55	83-10-12	1605	3300	23.5	980
				83-12-02	1605	3300	23.5	1000
				84-01-18	1540	3400	23.5	1000
				84-03-08	1220	3100	23.5	1000
				84-04-19	1600	3500	23.5	1000
				84-06-05	1545	3600	23.5	1100
				84-08-03	1530	3700	23.5	1100
				84-09-13	0910	3800	23.5	1200
212038157422501	3-2042-13	21 20 02	157 42 06	83-11-03	1200	9500	25.0	3100
				83-12-12	1000	9500	25.0	3000
				84-02-03	0945	8250	25.0	3000
				84-07-02	1305	9500	25.5	3000
212106157533701	3-2153-02	21 21 06	157 53 37	83-10-03	1540	395	22.0	68
				83-12-01	1200	390	22.0	67
				84-01-19	1405	390	22.0	68
				84-03-08	1400	390	22.0	68
				84-07-25	1540	390	22.0	70
				84-09-11	1525	390	22.0	71
212238157561102	3-2256-12	21 22 39	157 56 09	83-10-05	1510	700	25.5	170
				83-11-23	1315	690	24.5	170
				84-01-12	1540	700	23.5	180
				84-03-05	1600	690	24.0	180
				84-06-01	1530	690	25.5	180
212300158004801	3-2300-06	21 23 00	158 00 48	84-01-18	1210	610	22.0	140
				84-03-09	1050	590	22.0	130
212343158001001	3-2300-11	21 23 43	158 00 10	83-10-12	1525	860	22.5	200
				83-12-02	1430	850	22.5	200
				84-01-17	1455	850	22.5	200
				84-03-09	1105	850	22.5	200
				84-04-23	1115	850	22.5	200
				84-06-06	1245	850	22.5	200
				84-08-02	1130	900	22.0	200
				84-09-13	1420	900	22.0	210
212332157582201	3-2358-02	21 23 32	157 58 22	83-10-12	1250	2200	20.5	600
				84-01-18	1405	3100	20.5	880
				84-03-09	1235	2400	20.5	690
				84-06-06	1410	1550	20.5	430
				84-07-25	1400	1500	20.0	410
				84-09-13	1135	1220	20.0	340

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
212343157584701	3-2358-29	21 23 43	157 58 47	83-10-13	1315	2000	20.5	560
				83-12-01	1455	1700	20.5	530
				84-01-17	1515	2400	20.5	690
				84-03-08	1450	3050	20.5	880
				84-04-23	1135	2150	20.5	620
				84-06-06	1300	1500	20.5	420
				84-08-02	1405	1120	20.5	300
				84-09-13	1515	1040	20.5	280
212336157591801	3-2359-05	21 23 36	157 59 18	83-10-13	1325	2600	22.0	730
				83-12-01	1510	2300	22.0	700
				84-01-17	1525	2600	22.0	720
				84-03-08	1505	2600	22.0	710
				84-04-23	1155	2350	22.5	650
				84-06-06	1310	2200	22.0	610
				84-08-02	1415	2100	22.0	580
				84-09-13	1500	2000	22.0	560
212501158080701	3-2508-02	21 25 01	158 08 07	83-10-27	1450	1300	28.5	280
				83-12-12	1000	1300	28.0	260
				84-01-20	1330	1350	28.5	270
				84-03-16	1000	1300	28.0	270
				84-05-04	1030	1300	28.0	260
				84-06-12	1000	1340	28.0	270
				84-08-10	1330	1350	28.0	270
				84-09-20	1420	1250	28.0	260
212556157500301	3-2550-01	21 25 56	157 50 03	83-11-17	0805	140	23.0	17
				83-12-15	0750	140	22.5	17
				84-02-17	1150	135	23.0	18
				84-03-30	0845	140	22.5	18
				84-05-10	1400	120	25.0	17
212617158033801	3-2603-01	21 26 17	158 03 38	83-10-13	1205	360	22.5	47
				83-12-02	1215	350	22.5	44
				84-01-18	1140	360	22.5	47
				84-03-09	1200	350	22.5	47
				84-06-06	1200	345	22.5	47
212656158071801	3-2607-01	21 26 56	158 07 18	83-10-27	1330	340	24.5	45
				83-12-12	1100	350	24.0	44
				84-01-20	1300	450	24.5	45
				84-03-16	1040	350	24.5	46
				84-05-04	1110	360	24.5	45
				84-08-10	1450	355	25.0	44
				84-09-28	0920	345	25.0	46
212803158000701	3-2800-01	21 28 03	158 00 06	83-10-31	1020	160	23.0	15
				83-12-12	1630	160	22.0	18
212813158080201	3-2808-01	21 28 13	158 08 04	83-10-27	1350	1410	26.5	240
				83-12-12	1050	1420	26.0	200
				84-01-20	1225	1400	27.0	220
				84-03-16	1100	1300	26.0	200
				84-05-04	1150	1260	26.0	190
				84-06-12	1045	1320	26.5	190
				84-08-09	1500	1300	26.5	180
				84-09-20	1330	1350	26.5	180

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
212828158092001	3-2809-06	21 28 27	158 09 20	83-10-26	1500	340	23.0	29
				83-12-07	1550	360	22.0	30
				84-01-26	1400	360	22.5	30
				84-03-21	1105	360	22.5	31
				84-05-02	1000	375	22.5	31
				84-06-14	1100	380	22.5	33
				84-08-08	0915	390	22.5	33
				84-09-18	0945	370	23.0	32
212859158124301	3-2812-01	21 28 59	158 12 43	83-10-26	1140	640	25.0	120
				83-12-07	1515	650	25.5	120
				84-01-27	1030	650	25.0	120
				84-03-21	1300	630	25.0	120
				84-05-02	1105	650	25.0	120
				84-06-14	1300	670	25.0	130
				84-08-09	1420	660	25.5	120
				84-09-16	1200	590	25.5	100
212945158014301	3-2901-09	21 29 45	158 01 43	83-10-31	1145	200	22.0	19
				83-12-12	1700	190	22.0	20
				84-01-25	1640	200	22.0	20
				84-03-21	1500	185	22.0	19
				84-06-08	1330	185	22.0	20
				84-09-28	1100	185	22.0	19
212939158112301	3-2911-02	21 29 39	158 11 23	83-10-21	1310	260	21.5	24
				83-12-07	1300	260	21.0	26
				84-01-19	1540	240	21.0	24
				84-03-15	1500	260	21.5	24
				84-05-02	1425	265	21.0	26
				84-06-12	1210	260	21.0	24
				84-08-13	1235	255	21.0	24
				84-09-18	1545	260	21.5	25
213224158135901	3-3213-06	21 32 24	158 13 59	83-10-26	1335	850	23.5	200
				83-12-07	1500	890	24.0	210
				84-01-20	1430	850	23.5	210
				84-03-21	1340	870	24.0	200
				84-05-02	1040	850	24.0	200
				84-06-14	1230	890	24.0	210
				84-08-09	1340	890	24.0	200
				84-09-18	1100	830	24.5	210
213243157510001	3-3251-01	21 32 43	157 51 00	83-11-16	1550	850	22.5	220
				84-03-29	1405	900	22.5	220
				84-05-11	1110	850	23.5	220
				84-07-05	1300	900	23.5	220
213427158055501	3-3405-02	21 34 27	158 05 55	83-12-09	1530	575	22.5	120
				84-01-27	1630	620	23.0	130
				84-03-19	1600	535	23.0	110
				84-05-07	1200	630	23.0	110
				84-06-18	0835	540	23.0	100
				84-08-06	1700	500	22.5	100
				84-09-19	1345	500	22.0	89
213411158074501	3-3407-25	21 34 11	158 07 45	83-10-28	1030	1950	23.0	520
				83-12-14	1530	1900	22.5	530
				84-01-27	1600	1800	23.0	480
				84-03-20	1520	1700	23.0	510
				84-05-07	1530	1900	23.0	540
				84-06-15	1315	2100	23.0	540
				84-08-10	0930	2200	23.0	580
				84-09-20	0830	2200	22.5	590

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF OAHU--Continued								
213444158075501	3-3407-30	21 34 44	158 07 55	83-10-28	1000	7000	25.0	2200
				84-05-07	1130	3400	24.5	800
				84-06-15	1345	3300	24.5	800
				84-08-07	1630	4010	25.0	--
				84-09-19	1435	4200	25.0	1200
213438158091101	3-3409-16	21 34 36	158 09 12	83-10-28	1130	900	22.0	210
				83-12-14	1400	820	21.5	200
				84-01-27	1330	850	22.5	200
				84-03-20	0900	850	22.0	210
				84-05-11	1230	800	24.0	190
				84-06-15	1430	870	23.5	200
				84-08-10	1010	890	23.0	200
213636158053701	3-3605-03	21 36 36	158 05 37	83-10-24	1010	1700	21.5	430
				83-12-14	1300	1700	21.5	470
				84-01-27	1645	2000	21.5	550
				84-03-19	1520	1450	21.5	400
				84-05-09	1020	1600	21.5	390
				84-06-15	1000	2200	21.5	550
				84-08-06	0830	3400	22.0	950
				84-09-19	1150	3100	21.5	880
213636158053702	3-3605-21	21 36 35	158 05 40	83-10-24	0955	2600	21.5	710
				83-12-14	1250	1500	21.5	400
				84-03-19	1520	2000	21.5	600
				84-05-09	1005	2150	21.5	560
				84-06-15	1030	1600	21.5	400
				84-08-06	0900	1600	21.5	410
				84-09-19	1220	1600	21.5	400
213656157550401	3-3655-01	21 36 56	157 55 04	83-11-14	1340	240	22.0	32
				83-12-14	1410	230	22.0	32
				84-03-29	1305	240	22.0	34
				84-05-04	1030	240	22.0	34
				84-07-05	1120	235	22.0	34
213902157561601	3-3956-04	21 39 02	157 56 16	83-11-14	1320	650	21.5	160
				83-12-14	1315	550	22.0	150
				84-03-29	1230	650	22.0	160
				84-05-11	0900	640	21.5	160
214157158000101	3-4100-01	21 41 57	158 00 01	84-03-29	1035	340	21.5	57
				84-07-05	1000	320	21.5	59
214131158011601	3-4101-08	21 41 31	158 01 16	84-03-29	1140	230	21.0	34
214233157583501	3-4258-04	21 42 33	157 58 35	83-11-14	1110	1500	25.0	540
				83-12-14	1045	1800	25.5	540
				84-02-07	1000	1800	25.0	530
				84-03-29	1015	1800	25.0	530
				84-05-04	0745	1700	26.0	530
				84-07-05	0830	1800	26.5	530

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MOLOKAI

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
210825157014501	SMPL P-A	21 08 25	157 01 45	84-01-26	0820	103	18.0	10
				84-03-07	0800	102	18.5	10
210855157021001	SMPL P-B2	21 08 55	157 02 10	84-01-26	0915	390	21.5	93
				84-03-07	0900	375	21.5	81
210928157024801	SMPL P-C	21 09 28	157 02 48	83-10-26	1350	93	19.5	9.0
				83-12-15	0815	90	18.0	9.0
				84-01-26	0945	160	19.0	26
				84-03-07	0920	170	19.5	30
				84-07-25	0815	190	20.0	32
210923157031501	SMPL P-D	21 09 23	157 03 15	83-10-26	1410	93	23.0	10
				83-12-15	0840	98	21.5	11
				84-01-26	1015	88	22.5	10
				84-03-07	0935	84	22.5	7.5
				84-07-25	0825	124	24.5	18
210856157011201	4-0801-01	21 08 56	157 01 12	83-10-26	j0935	310	--	61
				84-04-23	j1500	318	--	62
210857156010701	4-0801-02	21 08 57	157 01 07	84-01-24	j1430	337	--	69
				84-07-24	j1500	346	--	68
				84-09-06	0830	340	--	68
210903157013001	4-0901-01	21 09 03	157 01 30	84-01-26	0900	390	--	89
				84-03-07	0825	365	20.5	80
				84-07-25	0750	310	20.0	64
				84-09-04	1625	290	20.0	54

HAWAII, ISLAND OF MAUI

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
203835156065001	6-3806-01	20 38 35	156 06 50	84-03-30	1150	680	21.5	170
203947156261201	6-3926-03	20 39 47	156 26 13	83-10-14	1010	2600	19.0	700
				83-12-05	1245	2850	18.5	750
				84-01-12	1420	2300	18.5	660
				84-02-28	1125	2600	19.0	710
				84-04-09	1200	2500	19.0	660
				84-05-21	1005	2650	18.5	670
				84-07-02	1135	2700	19.0	690
				84-08-24	1020	2500	18.5	660
204601156001501	6-4600-01	20 46 01	156 00 15	83-10-04	1610	520	21.0	92
				83-11-22	1415	490	21.5	78
				84-01-05	1235	490	21.0	84
				84-02-15	1745	500	21.0	86
				84-03-29	1545	500	21.0	85
				84-05-09	1650	500	21.0	84
				84-06-27	1635	540	21.0	100
				84-08-22	0705	540	21.0	100
204636156002601	6-4600-02	20 46 36	156 00 26	84-01-05	1320	500	19.0	130
204633156003201	6-4600-03	20 46 36	156 00 30	83-10-05	1755	730	19.0	180
				83-11-22	1440	270	19.0	54
				84-01-05	1310	320	19.0	78
				84-02-16	0935	320	19.0	74
				84-03-29	1615	280	19.0	62
				84-05-09	1630	380	19.5	82
				84-06-27	1655	700	19.5	170
				84-08-22	0650	810	19.0	220

j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
204635156270101	6-4627-14	20 46 35	156 27 01	83-10-14	1250	1380	23.5	340
				83-12-05	1415	1800	23.0	340
				84-01-12	1105	1600	23.0	340
				84-02-28	1330	1750	23.0	340
				84-04-09	1340	1700	23.5	330
				84-05-21	1245	1600	23.0	340
				84-07-02	1305	1800	23.0	350
				84-08-24	1340	1700	23.5	340
204845156255001	6-4825-01	20 48 45	156 25 50	83-12-07	j1000	1550	--	320
				84-02-29	j0620	1320	--	250
204931156371201	6-4937-01	20 49 31	156 37 12	84-02-22	0855	670	23.5	100
205014156212701	6-5021-01	20 50 14	156 21 27	84-08-28	0925	2050	21.0	550
205329156305502	6-5330-09	20 53 29	156 30 55	84-05-16	1210	710	22.5	160
				84-07-02	1310	700	22.5	160
				84-07-12	1500	780	22.0	170
				84-08-14	1515	770	22.5	180
205322156394501	6-5339-01	20 53 22	156 39 45	83-11-29	1050	860	21.5	180
				84-08-23	0920	1000	21.5	200
205320156394501	6-5339-02	20 53 20	156 39 45	84-04-05	0950	850	21.5	170
				84-05-14	1325	920	21.5	190
				84-06-29	1055	870	21.5	160
				84-08-23	0910	1000	21.5	210
205341156392300	6-5339-04	20 53 41	156 39 23	84-06-29	0940	930	20.0	220
205343156401101	6-5340-02	20 53 43	156 40 11	84-02-22	0935	1160	22.0	280
205416156244301	6-5424-01	20 54 16	156 24 43	83-12-07	j0900	2420	--	620
				84-02-29	j0930	2100	--	510
205651156401001	6-5640-01	20 56 51	156 40 10	84-02-22	1005	650	20.5	150
205837156384601	6-5838-01	20 58 37	156 38 46	83-10-13	1300	660	20.5	160
				83-11-29	1335	650	21.0	160
				84-01-10	1320	680	21.0	160
				84-02-22	1235	670	20.5	160
				84-04-05	1310	670	21.0	140
				84-05-14	1215	660	21.0	160
				84-06-29	1345	710	21.0	160
				84-08-23	1315	720	21.0	160
205838156383101	6-5838-02	20 58 38	156 38 31	83-10-13	1320	240	20.0	41
				84-01-10	1335	300	20.0	57
				84-02-22	1250	290	20.0	60
				84-04-05	1330	310	20.0	64
				84-05-14	1230	300	20.0	61
				84-06-29	1410	365	20.0	75
				84-08-23	1330	330	20.0	66

j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

STATION NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	DATE OF SAMPLE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
HAWAII, ISLAND OF HAWAII								
190832155310901	8-0831-02	19 08 32	155 31 09	83-10-12	1040	620	19.0	140
				84-01-16	1020	570	19.0	140
				84-03-05	1115	640	18.5	140
				84-05-15	1025	650	18.5	150
				84-09-24	1405	640	19.0	160
191108155281701	8-1128-02	19 11 08	155 28 17	83-10-12	0950	120	19.0	12
				84-01-16	0935	120	19.0	10
				84-03-05	1030	120	19.0	10
				84-05-15	0950	120	19.0	12
				84-07-20	1315	120	19.0	12
191114155294801	8-1129-01	19 11 14	155 29 48	84-01-16	1000	90	19.0	3.0
				84-09-24	1345	90	18.5	4.5
191219155291601	8-1229-01	19 12 25	155 29 22	84-01-16	0905	88	18.0	3.5
				84-03-05	0950	90	17.5	3.0
				84-05-15	0915	88	18.0	3.0
192108155021201	8-2102-01	19 21 08	155 02 12	83-10-19	0945	1100	25.0	280
				84-01-24	1155	1100	25.5	280
				84-03-01	1125	1100	25.0	280
				84-04-26	1435	1000	25.5	280
				84-05-29	1130	1130	25.0	300
				84-08-01	1455	11[illegible]	25.5	300
192457154571801	8-2487-02	19 24 57	154 57 18	83-10-19	0900	700	25.5	170
192646155532001	8-2653-01	19 26 46	155 53 20	83-11-07	1625	260	19.5	40
				84-01-16	1405	230	19.5	36
				84-05-15	1320	230	19.5	35
				84-07-19	1515	210	19.5	30
				84-09-25	0920	225	19.5	33
192738155534201	8-2753-01	19 27 31	155 53 42	84-03-05	1430	500	19.5	100
				84-07-19	1420	500	20.0	110
192731155534101	8-2753-02	19 27 22	155 53 38	83-11-07	1600	560	19.0	120
				84-07-19	1435	640	19.0	150
193113154555801	8-3185-01	19 31 13	154 55 58	84-01-24	1350	125	21.5	14
193105154580301	8-3188-01	19 31 05	154 58 03	84-08-03	1020	110	20.0	4.5
193508155570701	8-3557-03	19 35 08	155 57 07	83-11-07	1430	150	20.0	13
				84-07-20	0800	125	20.0	8.0
193505155570701	8-3557-04	19 35 05	155 57 07	83-11-07	1510	250	20.5	34
				84-01-17	1320	240	20.5	37
				84-03-06	1110	250	20.5	36
				84-07-20	0825	250	20.0	38
193502155572301	8-3557-05	19 35 02	155 57 23	84-01-17	1240	450	20.0	100
				84-03-06	1045	540	20.0	120
				84-05-16	0840	410	20.5	87
193805155020201	8-3802-03	19 38 05	155 02 02	83-10-19	1435	80	19.0	4.0
				84-01-31	1325	77	19.0	3.5
				84-04-13	1125	78	19.0	3.5
				84-05-30	1410	80	19.5	4.5
				84-08-03	0910	80	19.0	4.0
194040155035201	8-4003-02	19 40 40	155 03 52	83-11-10	0930	80	20.0	4.0
				84-01-31	1415	80	20.0	3.0
				84-04-13	1100	78	20.0	3.5
				84-05-30	1455	75	20.0	4.0
				84-08-02	1525	76	20.0	4.5
194222155035001	8-4203-05	19 42 22	155 03 50	84-05-30	1050	190	20.5	38
194222155034801	8-4203-06	19 42 22	155 03 48	83-11-10	1005	140	25.0	20
				84-02-10	0855	150	26.0	26
				84-04-19	0835	170	25.5	31

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

STATION NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	DATE OF SAMPLE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
HAWAII, ISLAND OF HAWAII--Continued								
194337155041801	8-4304-01	19 43 37	155 04 18	83-11-10	1030	16000	21.5	6100
				84-02-10	0920	10000	22.0	4400
				84-04-19	0905	44000	21.0	16000
				84-05-31	1255	44000	21.0	15000
				84-08-03	1105	20000	23.0	6200
194715155061301	8-4706-01	19 47 16	155 06 13	84-09-21	1125	115	18.0	4.0
194818155582301	8-4858-02	19 48 18	155 58 23	83-11-07	1255	2150	21.0	440
				84-01-17	1505	2000	21.0	430
				84-03-06	1315	2000	20.5	430
				84-05-16	1015	2000	21.0	440
				84-07-19	1215	2000	21.5	440
				84-09-25	1340	2200	21.0	450
194820155582401	8-4858-03	19 48 20	155 58 24	84-01-17	1500	3900	21.0	1100
				84-03-06	1310	3500	21.0	1000
195035155054501	8-5005-01	19 50 35	155 05 45	83-11-10	1355	175	21.0	12
				84-02-10	1040	190	20.0	12
				84-04-16	0835	195	20.5	12
				84-05-31	1355	170	21.0	12
				84-07-26	1130	170	20.5	12
				84-09-21	1040	170	20.0	12
195043155053801	8-5005-02	19 50 43	155 05 38	83-11-10	1335	210	22.5	18
				84-02-10	1025	240	21.0	26
				84-04-16	0825	270	21.5	26
				84-05-31	1340	260	22.0	26
				84-07-26	1105	270	21.0	32
				84-09-21	1020	285	20.5	35
195049155051601	8-5005-04	19 50 49	155 05 16	83-11-10	1415	17500	18.0	6400
				84-02-10	1015	11600	18.0	4800
				84-07-26	1050	17000	18.0	5400
				84-09-21	1000	17000	18.0	5600
195225155394401	8-5239-01	19 52 25	155 39 44	83-12-15	1415	430	31.0	20
				83-12-15	1425	430	31.0	19
195546155480301	8-5548-01	19 55 46	155 48 03	83-11-16	1040	2100	29.0	580
				84-05-17	0820	2100	29.0	580
				84-07-30	1020	2100	29.0	580
				84-09-26	0855	2200	28.5	580
195724155455301	8-5745-01	19 57 24	155 45 53	84-03-22	1010	300	27.0	25
195722155455201	8-5745-02	19 57 22	155 45 52	83-11-16	1120	310	27.0	27
				84-02-08	1000	290	27.0	26
				84-05-17	0905	410	27.0	52
				84-07-30	1110	290	26.5	27
				84-09-26	0945	290	27.0	28
195929155462501	8-5946-01	19 59 30	155 46 30	83-11-16	1215	440	26.5	72
				84-03-15	1200	430	26.5	71
				84-09-26	1620	450	26.5	78
195912155464201	8-5946-02	19 59 12	155 46 43	83-11-16	1300	370	26.5	50
				84-03-15	1220	360	26.5	49
				84-06-07	1335	370	26.5	50
				84-09-26	1605	380	26.5	50
200518155281601	8-6528-01	20 05 18	155 28 16	84-03-07	1155	430	21.0	72
				84-06-28	0920	450	21.0	60
201428155494201	8-7449-02	20 14 28	155 49 42	84-09-26	1240	175	22.0	22

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI

215845159232101 - 2-5823-01 TU8 CNTY, LIHUE KAUAI

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)
AUG 15...	1145	200	6.4	23.5	<5.0	<5.0	<.10	<5.0	.10	<3.0	<5.0

DATE	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLEEN TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)
AUG 15...	<10.0	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0

DATE	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)
AUG 15...	<3.0	<3	<10.0	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0

DATE	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)
AUG 15...	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0

DATE	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)
AUG 15...	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0	<5.0

DATE	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)
AUG 15...	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<3.0	<3.0

DATE	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1.2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)
AUG 15...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI--Continued

215845159232101 - 2-5823-01 TU8 CNTY, LIHUE KAUAI--Continued

DATE	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BENZO A BIS (2-ETHYLHEXYL) PHTHALATE TOTAL (UG/L)
AUG 15...	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 15...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

215843159422901 - 2-5842-03 S10 KSC, HULUHULUNUI KAUAI

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
NOV 09...	0900	1000	24.0	200
JAN 10...	0855	600	23.5	91
JUL 30...	0900	720	24.0	180
AUG 15...	1015	940	24.0	--

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
AUG 15...	1015	7.3	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
AUG 15...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 15...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI--Continued

215843159422901 - 2-5842-03 S10 KSC, HULUHULUNUI KAUAI--Continued

DATE	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO-SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)
AUG 15...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)
AUG 15...	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<3.0	<3.0

DATE	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)
AUG 15...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0

DATE	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	BIS (2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L)	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL PHENOL TOTAL (UG/L)
AUG 15...	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 15...	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

215912159234401 - 2-5923-03 CNTY, KILOHANA KAUAI

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 15...	1300	160	5.8	23.5	<5.0	<5.0	<.10	<5.0	.20	<3.0	<5.0	<10.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF KAUAI--Continued

215912159234401 - 2-5923-03 CNTY, KILOHANA KAUAI--Continued

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 15...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	CHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 15...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 15...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 15...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)
AUG 15...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0

DATE	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYLHEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)
AUG 15...	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0

DATE	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 15...	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU

212133.58035501 - 3-2103-03 S14 NAVY, BARBERS PT OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 13...	1000	1100	23.0	230	MAR 09...	0930	1100	23.0	240
DEC 02...	0905	1100	23.5	240	JUN 06...	0930	1100	23.0	240
JAN 18...	0910	1100	23.0	230	SEP 26...	0810	1100	23.5	240

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
SEP 26...	0810	7.0	<5.0	<5.0	<.10	<5.0	.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
SEP 26...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
SEP 26...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SAMPLING METHOD, CODES	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<.1	<.1	<.10	<5.0	n	<.10	<.1	<3.0	<3.0	<3.0

DATE	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)
SEP 26...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

< Actual value is known to be less than the value shown.
n Submersible pump.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212133158035501 - 3-2103-03 S14 NAVY, BARBERS PT OAHU--Continued

DATE	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L)	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)
SEP 26...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

DATE	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
SEP 26...	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212259157554201 - 3-2255-35 W189-3A C&H SGR REFINERY, AIEA OAHU

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 13...	1400	980	22.0	240	APR 23...	1440	970	24.5	240
JAN 19...	1345	1000	22.0	250	AUG 03...	1450	940	22.0	220
MAR 09...	1415	910	22.5	220	SEP 24...	1215	1100	21.5	280

DATE	TIME	PH (STAND-ARD UNITS)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)
SEP 24...	1215	7.1	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)
SEP 24...	<10.0	<3.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0	<10.0

DATE	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)
SEP 24...	<10.0	<3.0	<3.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212259157554201 - 3-2255-35 W189-3A C&H SGR REFINERY, AIEA OAHU--Continued

DATE	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO-SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)
SEP											
24...	<10.0	<5.0	<3.0	[illegible].0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<.1

DATE	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SAM-PLING METHOD, CODES	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)
SEP											
24...	<.1	<.10	<5.0	m	<.10	<.1	3.0	<3.0	<3.0	<3.0	<3.0

DATE	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)
SEP											
24...	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0

DATE	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)
SEP												
24...	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

212358158010901 - 3-2301-09 TO 10 W247 I-J OSCO WP1 OAHU

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT				
12...	1420	570	22.0	100
DEC				
02...	1320	585	22.5	110
JAN				
17...	1440	590	22.0	110
MAR				
09...	1120	540	22.0	100
JUN				
06...	1125	525	22.0	96
SEP				
13...	1430	480	22.0	83
24...	0925	470	22.0	--

DATE	TIME	PH (STAND-ARD UNITS)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)
SEP												
24...	0925	7.1	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

< Actual value is known to be less than the value shown.
m Suction pump.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212358158010901 - 3-2301-09 TO 10 W247 I-J OSCO WP1 OAHU--Continued

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
SEP 24...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
SEP 24...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	3.6	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
SEP 24...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SAMPLING METHOD, CODES	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)
SEP 24...	<5.0	<5.0	<.1	<.1	<.10	<5.0	m	<.10	<.1	<3.0	<3.0	<3.0

DATE	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)
SEP 24...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

DATE	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)
SEP 24...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

DATE	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	3,3'-DICHLOROBENZIDINE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
SEP 24...	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.
m Submersible pump.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212342157584301 - 3-2358-22 W2D4-4 SHIMABUKURO 1, WAIAWA OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT					JUN				
13...	1305	1100	20.5	300	06...	1255	1100	20.5	280
DEC					AUG				
01...	1450	1080	20.5	290	02...	1400	950	20.5	240
JAN					SEP				
17...	1510	1200	20.5	330	13...	1510	920	20.5	240
MAR					24...	0850	900	20.5	--
08...	1445	1200	20.5	330					
APR									
23...	1130	1100	20.5	300					

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
SEP												
24...	0850	7.2	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
SEP												
24...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
SEP												
24...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
SEP												
24...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SAMPLING METHOD, CODES	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)
SEP												
24...	<5.0	<5.0	<.1	<.1	<.10	<5.0	p	<.10	<.1	<3.0	<3.0	<3.0

< Actual value is known to be less than the value shown.
p Flowing well.

212342157584301 - 3-2358-22 W204-4 SHIMABUKURO 1, WAIAWA OAHU--Continued

DATE	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,2-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,2,4-TRI-CHLORO-BENZEN TOTAL (UG/L)	1,3-DI-CHLORO-BENZENER TOTAL (UG/L)
SEP 24...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

DATE	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L)	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)
SEP 24...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

DATE	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UC/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
SEP 24...	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212506157582301 - 3-2558-10 S16 NAVY, WAIAWA OAHU

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 12...	1225	800	21.5	190	APR 23...	1400	620	21.5	150
NOV 14...	1000	730	21.5	180	JUN 06...	1435	595	21.5	130
DEC 02...	1440	720	21.5	160	AUG 02...	1340	550	21.5	120
JAN 18...	1425	720	21.5	170	SEP 13...	1230	540	21.5	120
MAR 08...	1430	660	21.5	160					

DATE	TIME	PH (STAND-ARD UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS (CACO3)
NOV 14...	1000	6.9	8.2	130	72	19	19	90	60	4	3.2	54

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM O CONSTI-TUENTS, DIS-SOLVED (MG/LO	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L) AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L) AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L) AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L) AS FE)	IRON, DIS-SOLVED (UG/L) AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L) AS PB)
NOV 14...	22	<.10	59	420	1.3	.110	<1	<1	<10	3	170	6	5

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212506157582301 - 3-2558-10 S16 NAVY, WAIAWA OAHU--Continued

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)
NOV 14...	10	1	<.1	1	<1	30	<.01	2	<.1	<.10	<.010	<.1

DATE	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)
NOV 14...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01

DATE	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 14...	<.01	<.01	<.01	<.01	<.1	<1	<.01	<.01	<.01	<.01	<.01

212852157580301 - 3-2858-01 STATE, MILILANI MAUKA A OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
AUG 31...	1000	--	--	21.5	--	--	--	--	--	--
SEP 11...	1200	182	8.0	21.0	8.6	11	7.0	14	.90	61

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)
AUG 31...	--	18	--	--	--	--	--	--	--	--	--	--
SEP 11...	3.7	17	<.10	42	130	.50	.47	.50	.080	80	<1	<100

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
AUG 31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<10	1	<10	1	5	<10	<3	5	<10	<10	2	<.1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

212852157580301 - 3-2858-01 STATE, MILILANI MAUKA A OAHU--Continued

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)
AUG 31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<1	5	<1	<1	20	<.1	<.10	<.001	<.10	<.10	<.1	<.10

DATE	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)
AUG 31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<.001	<.001	<.001	<.01	<.001	<.001	<.001	<.01	<.001	<.001	<.001	<.01

DATE	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)
AUG 31...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<.01	<.01	<.01	<.01	<.01	<.1	<.1	<.1	<.10	<.10	<.1	<1

DATE	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	AGENCY COLLECTING SAMPLE (CODE NUMBER)	SAMPLING METHOD, CODES
AUG 31...	--	--	--	--	--	j	--
SEP 11...	<.01	<.01	<.01	<.01	<.01	k	n

213429158055501 - 3-3405-01 W323-1 CNTY, WAIALUA OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
SEP 24...	1100	480	6.9	22.5	<5.0	<5.0	<.10	<5.0	.10	<3.0	<5.0	<10.0

< Actual value is known to be less than the value shown.
j Collected by non-USGS agency.
k Collected by USGS.
n Submersible pump.

213429158055501 - 3-3405-01 W323-1 CNTY, WAIALUA OAHU--Continued

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
SEP 24...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
SEP 24...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
SEP 24...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)
SEP 24...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0

DATE	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
SEP 24...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
SEP 24...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	BIS(2-ETHYLHEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
SEP 24...	<5.0	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

213512158061601 - 3-3506-03 TO 04 W329 A-B WSCO P8 A-C OAHU

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 20...	1005	580	22.0	120	JUN 05...	0910	570	22.0	120
DEC 14...	1100	570	22.0	120	AUG 06...	1230	580	22.0	120
JAN 23...	1120	600	22.0	120	SEP 17...	1100	565	22.0	120
MAR 13...	1230	590	22.0	120	26...	1145	600	22.5	--
MAY 07...	0900	565	22.0	110					

DATE	TIME	PH (STAND-ARD UNITS)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)
SEP 26...	1145	6.8	<5.0	<5.0	.20	<5.0	.60	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)
SEP 26...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	4	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)
SEP 26...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<10.0	<5.0	<3.0	19	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SAM-PLING METHOD, CODES	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)
SEP 26...	<5.0	<5.0	<.1	<.1	<.10	<5.0	m	<.10	<.1	<3.0	<3.0	<3.0

DATE	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,2,4-TRI-CHLORO-BENZEN TOTAL (UG/L)	1,3-DI-CHLORO-BENZENEE TOTAL (UG/L)
SEP 26...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

< Actual value is known to be less than the value shown.
m Suction pump.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF OAHU--Continued

213512158061601 - 3-3506-03 TO 04 W329 A-B WSCO P8 A-C OAHU--Continued

DATE	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDI CHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)
SEP 26...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

DATE	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
SEP 26...	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

HAWAII, ISLAND OF MAUI

205104156081801 - 6-5108-01 STATE DOWALD, KEANAE MAUI

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS (CACO3)
FEB 17...	1000	64	0	11	8.9	20	39	1	3.9	96

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
FEB 17...	4.9	11	.20	43	.12	12	1	160	j

205102156282501 - 6-5128-02 516 HC&S, PUUNENE MAUI

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC 07...	1045	1770	--	330	JUL 12...	1305	1950	23.5	400
FEB 29...	--	1720	--	330	AUG 21...	0825	2000	24.0	400

< Actual value is known to be less than the value shown.
j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

205102156282501 - 6-5128-02 S16 HC&S, PUUNENE MAUI--Continued

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
AUG 21...	0825	7.0	<5.0	<5.0	<.10	<5.0	.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
AUG 21...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 21...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<3.0	<3.0

DATE	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)
AUG 21...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0

DATE	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYL-ETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

205102156282501 - 6-5128-02 S16 HC&S, PUUNENE MAUI--Continued

DATE	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

205330156305401 - 6-5330-11 W15F CNTY, WAILUKU MAUI

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 17...	1455	620	22.5	120
DEC 07...	0920	610	22.5	120
JAN 17...	1410	560	22.5	120
FEB 27...	1420	590	22.5	120
APR 06...	1420	600	22.5	120
MAY 16...	1220	590	22.5	120
JUL 02...	1320	590	22.5	120
AUG 14...	1520	490	22.5	91
20...	0915	480	22.5	--

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
AUG 20...	0915	7.2	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
AUG 20...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 20...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

205330156305401 - 6-5330-11 W15P CNTY, WAILUKU MAUI--Continued

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROCLOUROMETHANE TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<3.0	<3.0

DATE	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)
AUG 20...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0

DATE	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)
AUG 20...	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYLPHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYLPHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 20...	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

205440156310202 - 6-5431-03 CENTRAL MAUI SOURCE JOINT VENTURE,MAUI

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 20...	0945	190	7.0	21.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 20...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF MAUI--Continued

205440156310202 - 6-5431-03 CENTRAL MAUI SOURCE JOINT VENTURE,MAUI--Continued

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 20...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 20...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
AUG 20...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	BIS(2-ETHYLHEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII

192924154564701 - 8-2986-01 W9-5A CNTY, PAHOA HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 19...	0840	120	23.0	5.5	AUG 01...	1345	118	23.0	6.0
MAR 01...	0940	120	23.0	5.5	21...	1340	118	23.0	--

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	ANTHRACENE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)
AUG 21...	1340	7.5	<5.0	<5.0	<5.0	<3.0	<5.0	<10.0	<10.0	<10.0	<10.0

DATE	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)
AUG 21...	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<5.0	<10.0

DATE	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 21...	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<10.0	<5.0	<3.0	11	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SAMPLING METHOD, CODES	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)
AUG 21...	<30.0	<5.0	<5.0	<5.0	n	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0

DATE	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)
AUG 21...	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

< Actual value is known to be less than the value shown.
n Submersible pump.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII--Continued

192924154564701 - 8-2986-01 W9-5A CNTY, PAHOA HAWAII--Continued

DATE	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYLHEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)
AUG 21...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0

DATE	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

193803155020201 - 8-3802-01 W9-B CNTY, OLAA HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	ANTHRACENE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
AUG 21...	1020	77	7.3	19.0	<5.0	<5.0	<5.0	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)
AUG 21...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<5.0	<10.0

DATE	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 21...	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITRO-SODIMETHYLAMINE TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<10.0	<5.0	<3.0	3.9	<5.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII--Continued

193803155020201 - 8-3802-01 W9-B CNTY, OLAA HAWAII--Continued

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PYRENE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)
AUG 21...	<30.0	<5.0	<5.0	<5.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0

DATE	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)
AUG 21...	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0

DATE	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0

DATE	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<5.0	<30.0

194037155035301 - 8-4003-01 W8-3 CNTY, HILO HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
NOV 10...	0935	80	20.0	4.0	MAY 30...	1500	75	20.0	4.0
JAN 31...	1420	80	20.0	3.0	AUG 02...	1530	76	20.0	4.5
APR 13...	1105	78	20.0	3.5	20...	0955	75	20.0	--

DATE	TIME	PH (STANDARD UNITS)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)
AUG 20...	0955	7.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

< Actual value is known to be less than the value shown.

194037155035301 - 8-4003-01 W8-3 CNTY, HILO HAWAII--Continued

DATE	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARA-CHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)
AUG 20...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 20...	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

DATE	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<3.0	<3.0

DATE	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)
AUG 20...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0

DATE	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHALATE TOTAL (UG/L)	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)
AUG 20...	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 20...	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII--Continued

195857155142301 - 8-5814-01 CNTY, LAUPAHOEHOE HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 22...	1130	490	7.7	19.5	<5.0	<5.0	<.10	<5.0	.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 22...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 22...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 22...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)
AUG 22...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<3.0

DATE	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)
AUG 22...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

HAWAII, ISLAND OF HAWAII--Continued

195857155142301 - 8-5814-01 CNTY, LAUPAHOEHOE HAWAII--Continued

DATE	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	BIS(2-ETHYL HEXYL) PHTHAL-ATE TOTAL (UG/L)	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)
AUG												
22...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

DATE	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG								
22...	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the value shown.

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54x10^{1}	millimeters (mm)
	2.54x10^{-2}	meters (m)
feet (ft)	3.048x10^{-1}	meters (m)
miles (mi)	1.609x10^{0}	kilometers (km)
	Area	
acres	4.047x10^{3}	square meters (m^{2})
	4.047x10^{-1}	square hectometers (hm^{2})
	4.047x10^{-3}	square kilometers (km^{2})
square miles (mi^{2})	2.590x10^{0}	square kilometers (km^{2})
	Volume	
gallons (gal)	3.785x10^{0}	liters (L)
	3.785x10^{0}	cubic decimeters (dm^{3})
	3.785x10^{-3}	cubic meters (m^{3})
million gallons	3.785x10^{3}	cubic meters (m^{3})
	3.785x10^{-3}	cubic hectometers (hm^{3})
cubic feet (ft^{3})	2.832x10^{1}	cubic decimeters (dm^{3})
	2.832x10^{-2}	cubic meters (m^{3})
cfs-days	2.447x10^{3}	cubic meters (m^{3})
	2.447x10^{-3}	cubic hectometers (hm^{3})
acre-feet (acre-ft)	1.233x10^{3}	cubic meters (m^{3})
	1.233x10^{-3}	cubic hectometers (hm^{3})
	1.233x10^{-6}	cubic kilometers (km^{3})
	Flow	
cubic feet per second (ft^{3}/s)	2.832x10^{1}	liters per second (L/s)
	2.832x10^{1}	cubic decimeters per second (dm^{3}/s)
	2.832x10^{-2}	cubic meters per second (m^{3}/s)
gallons per minute (gal/min)	6.309x10^{-2}	liters per second (L/s)
	6.309x10^{-2}	cubic decimeters per second (dm^{3}/s)
	6.309x10^{-5}	cubic meters per second (m^{3}/s)
million gallons per day	4.381x10^{1}	cubic decimeters per second (dm^{3}/s)
	4.381x10^{-2}	cubic meters per second (m^{3}/s)
	Mass	
tons (short)	9.072x10^{-1}	megagrams (Mg) or metric tons